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FRATERNA

Official Bulletin Of The

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H. curtisii King & Gamble

International Hoya Association

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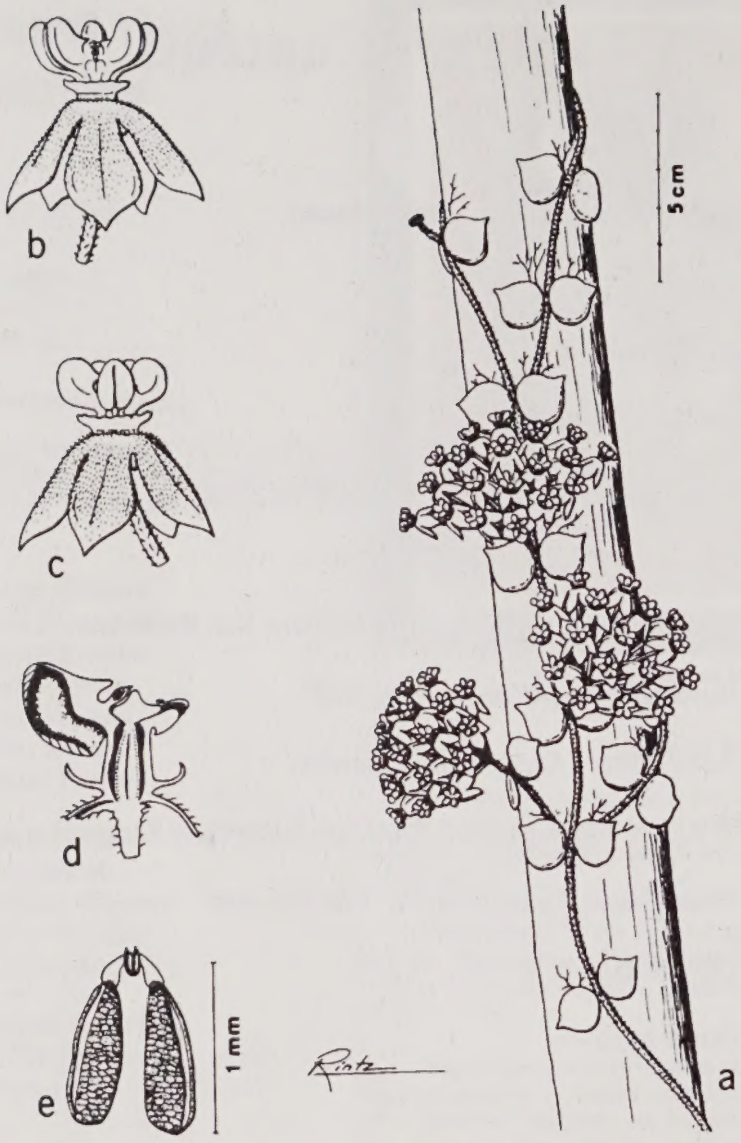


Hoya curtisii K. & G. a) habit;; b) flower in side view;; c) flower in side view;

d) flower in median section;; c) twin pollinia. From Curtis 2894

Distinguishing Features: STEMS thin and hirsute. LEAVES fleshy, oval, apically cuspidate, surface rugulose; c, 1.5 cm long and wide. PEDUNCLE horizontal, rigid, c. 5 mm long. UMBEL negatively-geotropic, convex with rigid, uniform pedicels c. 2.5 cm long; pedicels hirsute; 1-30 flowers. COROLLA lobes reflexed, pubescent inside except glabrous at the tips of the lobes; c. 1 cm long by 7mm diameter. CORONA subtended by an inflexed annulus; lower lobe inflated, globose. CORPUSCLE small.

Ecology: Endemic to Malaysia and known only from a single collection near Taiping. Perak at c. 700 meters.

Hoya curtisii A Hoya That Wouldn't But Could And Did

Don't laugh at my funny title. This is a hoya that I gave up on 4 times before I finally got one to grow. It was another 15 years before it decided to bloom. No fault of the plant, I just didn't understand what it needed, wanted or probably both. Here is the story!

In the spring of 1991 I ordered my first cuttings of an interesting sounding miniature plant with the name of H. pruinosa. It was described as a very small, easy to grow and bloom basket plant. That sounded like a plant that was right down my ally, the kind I always did the best with, you know, like H. bilobata, H. lacunosa, H. leytensis etc. Sad to say the cuttings didn't root and gradually withered away. I contacted the grower that I had purchased them from and the cuttings were replaced. Well, same story, the cuttings just sat, didn't form roots, didn't do nothing except dry up and crumble to dust. It was getting very late in the year so I gave up on trying to obtain anymore cuttings for that year. Early spring of 1992, I decided to put in another order and this time was determined to root this plant and grow it.

I purchased a used fish tank from the Goodwill store, filled the bottom 1/3 full with chunks of pumice and stood some pieces of redwood bark against the insides of the tank. I then poured in enough water to cover the top of the pumice. The water crept up the redwood bark until it was nice and moist. As soon as I received my cuttings they were tied to the bark with nylon fish line, and a glass cover was placed over the top. I was very careful to open the top for several hours each day to let out excess moisture. I was finally really making some progress. I could see arial roots forming and even some roots burrowing into the bark. Yee Hah, success at last!

It was the month of May and my husband and I always went to the mountains to pick wild mushrooms in the spring. We had a spot where there were only 2 kinds of mushrooms that grew, the Morels and what we called Elephant Ears. They are both delicious and we never had to worry that we might be getting ahold of a poison type.

It is a long drive from our house, 20 miles or so to the end of the highway where we turned off and drove another 40 miles straight up an old Mt. road and into a beautiful forest where the mushrooms grew.

All day long, I never thought about my greenhouse, or what the weather might be down in the valley. When we arrived home after dark, I found that the temperature had reached 80°F and had been over 100°F inside the greenhouse. A lot of my plants were scorched pretty badly without the fans going but my poor little H. pruinosa looked like shredded, stewed cabbage, cooked to a T.

I decided that's all, no more, I give up! which lasted until 1994 when I decided to try once again. By that time Dr. Richard Rintz had published his "The Peninsular Species Of Hoya" and had identified this little plant as H. curtisii, and I had also received a photo of flowers from Ted Green . That settled it, I had to grow this plant no matter the consequences. I ordered cuttings again, I lost them again, but remember, this time I'm really, really determined!

I guess the 5th time was just my time. I put some new cuttings down to root in my old favorite standby rooting mix of half and half perlite and vermiculite, slightly moist. I didn't use a hormone rooting powder or a heating table but I did slip a plastic bag loosely over the top of the cuttings and added some water after 5 days. I checked them on the 10th day and they had roots. I left them in the rooting mix for about a month then literally had to cut the pot off because the roots were so big. This of course is just the beginning of my ups and downs with H. curtisii. The long wait was just beginning.

True to the description, this is a remarkable little miniature plant. The foliage is dark emerald green, very tiny, very fat and succulent when grown on the dry side and marbled all through with beautiful white wavy lines. The foliage can grow so dense that it is virtually impossible to see the soil., which can also cause rot from the potting mix not drying out enough to pull in oxygen. Keep it in small pots, orchid pots with large holes in the sides are excellent. Once this plant gets going, it is a fast grower and the more it is pruned back, the more branches it forms. In a pot, the foliage can grow to several feet long.

I always grew this plant in very bright light and assumed that was what it required in order to bloom. However, year after year it refused to bloom for me. I was beginning to think that I might have a sterile plant, if there is such a thing. That is one that can grow beautiful foliage but never a sign of a flower. I have a few species like that, and have been threatening for years to throw them out. Probably never will.

I'm not much to endorse products or manners of growing as all of us have such different growing methods, however the different thing that I did last year was to use foliar feeding (that is I sprayed a light fertilizer mist on my plants twice a week) and out of necessity (because I had filled up all my ceiling hooks in the rafters of the greenhouse) I put these little darlings under flourescent lights in the late fall. Whether this difference had anything to do with the blooming of this plant remains a mystery. Maybe it did and maybe it didn't or maybe it was just ready to bloom no matter what I did. But for whatever reason, it did bloom right in the middle of winter, and continued to bloom, and in fact is still forming new umbels here in mid February. If I never see it bloom again, I can at least say I did "Once Upon A Time".

By Ann Wayman

COLLECTING HOYA'S IN THE WILD

Several years ago, I took a "trekking" vacation to Nepal; it was the fulfillment of a longtime dream and one of the most exciting times I have ever spent anywhere. My reason for wanting to see this part of the world were numerous, and seeing the high peaks of the Himalayas up close was on top of the list. One of my hobbies is traveling; and as I gained experience and became more seasoned, I came to prefer adventure vacations in remote and mysterious places over something tamer and more controlled. Besides being terminally addicted to hoyas, I'm an overall naturalist, and gravitate towards untouched wilderness areas for all of the flora and fauna. I figured walking a "trek" for several weeks through the mountain valleys of central Nepal would give me an opportunity to see many things that were interesting, but I never expected to find hoya's growing in their natural habitat. It was a wonderful surprise, and still makes me smile almost six years later.

If you've never been to Nepal and trekked, it's a real experience. Before I went, I read a lot and talked to many people who had trekked; learned that it would be rugged, and that there was much uphill and downhill climbing, some at high elevations. My traveling companion and I purposely chose what appeared to be an easy trek; very basic and straightforward. He and I were both office working people, and while we were in what we considered "good shape" we didn't want to push the issue. It turned out that trekking was harder than we thought, and stating that we had sore muscles was a mild way of describing what we felt at the end of the first few days. Gaining (or losing) several thousand feet of altitude in just a few miles is standard procedure, and my legs didn't let me forget that at the start.

It was well worth the pain. The beauty of the countryside, the mountains and the people were simply not to be believed. Traveling from the beginning of the trailhead at Pokhara, we wound our way up over 120 miles into the Kali Gandaki River Valley, and on up to the Tibetan Plateau at Jomson over a twelve day period. We saw the Himalayas in all of their great beauty, and watched the sun rise at 12,000 feet with an incredible 360 degree panorama of the entire range! On the winding narrow paths we passed Tibetan traders with their donkey caravans of goods, chatted with local women and children, and camped in picturesque villages all along the way. It was truly remote, there was no electricity. no radio, television or telephones. There were no roads, cars, motorcycles, or vehicles of any type once we got into the mountains. The only method of travel was on foot or a donkey's back. We were careful; this was not the place to get hurt or become sick. If this should happen, the Nepalese military would send in a rescue helicopter, at $2,000 per hour, payment in advance.

During the third day we began to walk through dense forests, with trees full of orchids and other epiphytes. We were overwhelmed with excitement. I had never seen so many beautiful plants in their native habitat. Some of the tree branches were literally covered with plants. It was not the flowering season for most of the orchids, but there were blooming jasmine shrubs that perfumed the air as we brushed past them. Dense tree ferns covered streams with clear pools of water containing rocks so beautiful it appeared that someone had come along before us and arranged them. We saw a whole family of silver and black-faced lemur monkeys foraging in huge rhododendron and oak trees, not more than 20 feet from the path. Some of the rhododendron trees were over 30 feet tall and covered with clouds of

scarlet and pink blooms! The overload to the senses was almost too much to take!

Outside of the village of Birethanti, I stopped near a waterfall to photograph a clump of blooming orchids hanging over the falls. I looked up into the branches above my head, I gave a start and yelled! There were clumps of Hoya bella, lots of them! they were paler and not as healthy looking as the plants one normally sees in greenhouses, but there was no doubt as to what they were. My traveling companion does not share my plant mania and was not very enthusiastic about these slender pale green branches. As I walked on ahead, I noticed that H. bella was common to the area and although I looked carefully, I could see no other species of hoya.

Several days later we crossed a major mountain pass and got caught in a blizzard, and got to see the mountains and forests like never before but I didn't spot any more hoyas.

Late on the sixth day we struggled up a rocky slope near the village of Ghara that was determined to wind us. It was dry and hot, and the steps were very steep. At the top, we took a well deserved rest. The topography had changed abruptly; we had come from a dry and sparsely vegetated valley; now we were back into some forest, and the trees were full of orchids again. I sat leaning against a tree during our break and looked down; a hoya vine snaked around the base of the tree and into the leaves and rubble at the base, it was distinctly thin leaved like the H. shepherdii that I had seen in the past. As I ran to get my companion, I looked into a tree that grew out of the cliffside overhanging the valley. A huge hoya clump, obviously still another species, was entwined among the orchids and other epiphytes. There was no time to linger since we had to get to our campsite before dark and it was very late already. I took as many pictures as I could but did not collect any of the vines. We were going to be on trek and on the road for several more weeks and there was no way to keep the cuts. I don't ever remember being so excited and yet so frustrated.

My story does have a somewhat happy ending. At the end of our trek we flew back to Kathmandu from Jomson, but our porters walked back. I made some detailed drawings of the hoyas I had seen and asked our friendly Tibetan cook if he would collect some cuttings on his way back. Several weeks later I saw him and he presented me with a bag full of half-rotted orchids and other plants as well as several pieces of H. bella. I managed to keep them alive and they survived, grew and bloomed well for several years before losing the plant to red spider mites. The magic in these very typical H. bella flowers were in the knowledge that they had their beginning, not in some stateside greenhouse, but on a wondrous Mt. where I had spent a good part of one glorious summer.

by Mike Van Buskirk

Reprinted from a 1991 issue of Fraterna

H. bella photo by Tammy Frank

H. pachyclada Kerr

For those of us that are accustomed to seeing H. pachyclada in it's pristine white form with just the yellow pollinium showing in the center, it's quite startling to suddenly find that there is a version with a gorgeous cranberry red center. This seems to be the case and though I personally have not seen my plant flower as yet, one of our members, Mr. Ubol Paradee of Bangkok Thailand has sent me some beautiful photos of his plant in bloom.

There has been some controversy over whether this plant is H. pachyclada or H. subquintuplinervis. The foliage of the plant that I received with the description of (white flower with red center) is identical to the H. pachyclada plant that I have grown for many years, plus the flower shape on Mr. Paradee's photo (except for the red center) is also identical, at least to the naked eye. I won't be able to tell for sure until I get flowers for comparison study in my own growing area. It's quite impossible to make a determination from flowers sent from other's plants, as they may not always be correctly identified by the seller of the plant. For this reason we have many incorrectly identified plants being grown, and the confusion escalates on a daily basis. Ann Wayman

Hoya pachyclada Kerr

Re-instating 3 Hoya's of Samoa

In 2001 Dr. Art Whistler sent me all his herbarium sheets collected in the Samoan Islands, along with many photos of hoyas in flower. Later I published my book Samoan Hoya Species in March 2002 based on Art's data and literature I had accumulated. After all these years I would like to now offer my assessment of the hoya species of Samoa. In doing this I realize my view differs from my friend Dr. Whistler.

First in a broad sense I reinstate Hoya pycnophylla Rechinger, Repertorium Specierum Novarum 5 (1908) # 468 Rechinger. Hoya upoluensis Reinecke, Botanical Jarbucher 25 (1893-94) 669, "Die Flora der Samoan-Isln" # 89: Hoya samoensis Seemann, Flora Vitiensis (1866) 163, Powell in Herb. Hook. In my view these three species are distinct and separate. None of these species are Hoya pottsii Trail, 1830, Trans. of the Hort. Soc. 7:25 James Trail.

Let me pause here to say the status of Hoya pottsii Trail is clouded by the lack of original Type material as well as many discrepancies in subsequent presentations. Below I have presented just a little of the material available to show the confusion surrounding this species. For a complete analysis see my book on this subject.

In Transactions of the Horticultural Society 7 (1830) 25. J. Trail. IV. Hoya pottsii. This species is a valuable addition to our gardens, for, besides having peculiar beauties, it is of easy culture and it blossoms freely. The late Mr. John Potts, on his return from China in August 1822, and shortly before his death, gave Mr. Sabine a single leaf of this Hoya, which he had gathered in one of his excursions near Macao; it was carefully planted, and anxiously attended to, until it sent forth a shoot from its base in the spring of 1824. In the autumn of the same year the plant put forth blossom buds; these dropped off, but perfect flowers were produced in the following year.

In record of the original discovery of the plant by Mr. Potts, and as a proof of the esteem in which he was held by his employers, the species was named in the Garden of the Horticultural Society in compliment to him.

The stem is slender, greenish brown, covered irregularly with warts, from which small roots are freely produced. The leaves are cordate, sharply, acuminate, having occasionally a rusty stairs partly spread over them, beneath of a pale whitish green without veins, above light yellowish green, with three distinct veins of ratter lighter colour than the leaf, from which smaller veins occasionally branch off. The petioles are not particularly thick, and less than half an inch long; they are of the same colour as the stems. The umbels are globose, producing very beautiful pale flowers with the same waxy appearance as H. carnosa, and smelling, like the Peruvian, Heliotrope, they are of a yellowish colour. The corolla is; slightly downy, and much reflexed. The crown has a pinkish centre. The figure annexed is engraved from a drawing made by Mrs. Withers, from the original plant when it first blossomed in 1825.

In The Botanical Cabinet (1833) t. 1969. Loddiges. No. 1969. Hoya Pottsii. Class. Pentandria. Order Trigynia. *This was introduced in 1831, from China, to the garden of

the Horticultural Society, by their collector, Mr. Potts, after whom it has received its name. It has been kept constantly by the stove, and flowered in the month of May. It may be increased without difficulty by cuttings, and should be potted in rich loam.

Compiler's note: * it was introduced in-1822 not 1831. Below drawing shows nerves on the lower leaf surface (contrary to type description).

In Botanical Magazine (1835). Curtis's. t. 3425 Hoya pottsii. Mr. Pott's Hoya. Class and Order: Pentandria Digynia. (Nat. Ord.

?Asclepiadaceae.) Specific Character and Synonyms. Hoya* pottsii; foliis cordato-ovatis brevi-acuminatis supra trinerviis, corolla supra vix pubescente. Hoya Pottsii. Traill, in Hort. Trans. v. 7., p. 25 t. 1. ? Loddiges, Bot. Cab. t.1609. (error should be 1969).

Cultivated in the stove of the Bot. Garden of Glasgow, where it flowers in May. It is much to be regretted that Mr. Traill, in his otherwise valuable paper on the different species of Hoya, has not more precisely defined the characters between his Hoya Pottsii and H. trinervis. Our plant this undoubtedly the H. Pottsii of the Bot. Cabinet, but the colour of the flowers is different from that of Mr. Traill, and in this respect, as well as in some others, it agrees better with the trinervis, of which its author says, "It bears a Great to resemblance to H. Pottsii, from which, however, it may be principally distinguished by its larger and thinner leaves, the veins of which are more strongly marked, and also by the yellowish colour in the centre of the crown." May not the two be varieties of one and the same plant ? In ours, the old leaves at the base of the plant are much thicker than the upper ones, and have the nerves more obsolete. From H. carnosa the species is best known for its larger, broad three nerved leaves, and the almost entire absence of down upon the upper surface of the corolla. It wholly wants the bright red spots in the inside of the crown, and the scent certainly cannot be compared to that of a "rich plumb cake, or a combination of that of honey with the almond flavour of the Peruvian Heliotrope," (to which that of H carnosa is likened by Sir J. E. Smith,) but rather resembles that of strong and bad honey.

If we are correct in considering the plant to be the original H. Pottsii, it is a native of the vicinity of Macao where a leaf was gathered by the zealous collector to the Horticultural Society, whose name it bears, and which being, given to Mr. Sabine, and planted, soon flourished. The H. trinervis was brought from China by Mr. John Damper Parks.

Descr. Stem long, branched, twining, the extremities frequently leafless and rooting. Leaves ovato cordate with a short acumen; when old, very thick, and between fleshy and coriaceous, convex below, and pale green, with scarcely an appearance of nerves; above concave, deep green, with one central and two lateral nerves, the middle one sometimes sending out very obscure lateral oblique ones, the margin slightly revolute. Petioles rounded, short, *very thick; when old, clothed with a sort of pale brown bark. Peduncle from the side of one of the petioles at its base, two inches long, bearing a compact almost globose umbel of flowers. Calyx with five short, broadly ovate teeth. Corolla rotate, of five broadly ovate, acute, very pale yellow-green lobes, quite glabrous below, above so slightly downy that the pubescence can only

be seen by the assistance of a microscope. Crown of five large, depressed fleshy, ovate, spreading, white leaves, between which the colour is orange.

Named in. honour of Mr. Thomas Hoy, gardener to His Grace the Duke of Northumberland.

*Type description says not particularly thick.

Compiler's notation: There is a question as to whether they are even referring to the original H. pottsii. I believe this ambiguity permeates this species identity and even though being questionable, has been indiscriminately lumped with almost any species that has a palmate leaf nervation whether 3 or 5 nerved, palmate or tuplinerved and irregardless of the size of the leaf or its base and a disregard for the flower structure or number of flowers per cluster etc. etc. Description says "one central and two lateral nerves" but the drawing below shows a leaf with 7 nerves on the upper surface. (shear inconsistency).

In General System of Gardening and Botany 4 (1837) 126. G. Don. 17 H. pottsii

(Trail, in hort. trans. 7. p. 25. t. 1.) stems slender, greenish brown, usually covered with warts; leaves cordate, acuminated, with a rusty stain partly spread over them, pale whitish below, light yellowish-green above, with 3 principal veins; umbels globose. Woody perennial shrub. Native about Macao. Flowers pale yellow, slightly downy, smelling like Heliotropium. Corona slightly purple in the Centre. Pots's Hoya. Fl. Ju. Aug. Clt. 1822. Shrub tw.

Key characters of Hoya pottsii Trail : Most not from the poor type description.

Leaves sharply acuminate, convex below, pale green, scarcely an appearance of nerves: concave above, deep green; one central & 2 lateral nerves of lighter color. No measurements.

Petiole short - 1.5 cm.

Peduncle 5 cm. long.

Cluster compact, almost globose.

Calyx broad ovate.

Corolla reflexed, glabrous out; very fine puberulent in (seen only with microscope).

Corona scales ovate acute.

I must note that P. I. Forster & D. J. Liddle gave a typification and synonymy of Hoya pottsii Traill in Austrobaileya 3/4 (1992) 635, using Traill's figure 1 (1827).

Going back to my original premise.

These in the past have all been placed into Synonymy with H. pottsii. I do not feel any of these species belong there. First none have cordate leaf bases, and none have palmate nervation. Quoting from the type descriptions: upoluensis "basi angustatis, conspicue quintuplinerviis" samoensis 5-tuplinervis" and pycnophylla "conspicue quintuplinervia".

by Dale Kloppenburg

A Tale of a Misidentified Hoya Species

One of our most common commercial hoya species has been misidentified ! The species is what we are now labeling Hoya acuta Haworth (Hoya parasitica Wallich, Hoya pallida Lindley). The early literature descriptions of this species are mostly consistent and differ in many details from our mislabeled plants. The key characters of the species are:

Native of the Ganges region (Delta.... low elevation)

Leaves ovate lanceolate acuminata; three nerved from the base; 2-4" long x 1"

wide. (5-10 cm. x 2.5 cm.)

Veins scarcely conspicuous above, invisible below

Midrib of rather lighter color

Petioles are very thick and fleshy; short

Peduncles 1/2 length of the leaf, would be 3.75 cm. when leaf is 3" long

Calyx leaflets linear, 1/2 length of corolla tube

Compact hemispherical umbels; corolla inside glabrous, deeply cut

Corona scales ovate acute, concave; outer apex upright

All the early descriptions of this species are listed below (1826 – 1874) A few of these descriptions are actually of a different species (again misidentified). I have listed them below. For more detail see my "Introduction Ganges Hoya "

- 1. Plantarum Succulentarum (1821) 4. A. H. Haworth. Hoya acuta Haworth.
- 2. Botanical Register 9 (1826) 951. Lindley. H. pallida Lindley
- 3. System Vegetabilum (1826*) 110 (pag.834). Hoya pallida Lindley
- 4. The Botanical Cabinet (1828) 14. Loddiges. No. 1309. Hoya pallida Lindley
- 5. Transactions of the Royal Horticultural Society 7 (1830) 23.III. Hoya pallida Lindley
- 6. Flora of Indica 2 (1834) 36. W. Roxburgh. 15. A. parasitica Wallich
- 7. Contributions to the Botany of India:37. Hoya parasitica Wallich
- 8. General System of Gardening and Botany 4 (1837) 126. Hoya parasitica Wallich
- 9. Synopsis Plantarum 6 (1840) 891. D. N. F. Dietrich. 9. H. parasitica Wallich
- 10. Synopsis Plantarum (1840) 892. D. N. F. Dietrich. 27. H. pallida Lindley
- 11. Icones Plantarum (1843)."Indiae Orientalis" Wight.587. Hoya parasitica Wallich
- 12. *Prodromus 8 (1844) 636. DeCandolle. 13. H. pallida Lindley
- 13. DeCandolle, Prodromus Syst, Veg, 8 (1844) 637. Decaisne. 19. H parasitica Wallich
- 14. *Museum Botanicum Lugduno-Batavum 1 (1849) 60. C. L. Blume. 152 Plocostemma pallidum Bl.

- 15. Tuinbouw Flora 1 (1853) 72. H. W. De Vreise. 14. Hoya parasitica Wallich

- 16. *Annales Botanices Systematicas 3 (1852-1853) 67. G. C. Walpers. In Icones addendae, 66. H. pallida Lindley

- 17. Handbook of Indian Flora 2 (1866) 242. Robert Wight. (8) H. parasitica. Wallich.

- 18. Flora Indica (1874) 255. Roxburgh. (Reprint of Carey's 2 (1832) 43. 15. A. parasitica.

- * I do not feel these descriptions are of the species in question.

There are subsequent descriptions of this species that further cloud the picture by adding characteristics that are in opposition or contrary to the descriptions listed above. There are many more descriptions (at least 19) of Hoya acuta Haworth (Syn. H. pallida Lindley, H. parasitica Wallich, A. parasitica Roxburgh) and those species designated by James Trail and more by J. D. Hooker, incorrectly in my judgment.

The first valid description of our hoya, I believe, is Hoya ridleyi King & Gamble. The specie was reduced to a synonym of Hoya parasitica Wallich by Dr. Rintz, I am convinced incorrectly.

Hoya ridleyi King & Gamble

In Journal of the Royal Asiatic Society, Bengal Branch 74 (1903) 575. "Flora of the Malayan Peninsula" King & Gamble. 18. Hoya Ridleyi, King & Gamble, n. sp. A twining epiphytic undershrub, rooting at intervals on the bark of trees; branchlets pale, terete, lanceolate, rather slender when dry. Leaves fleshy, coriaceous when dry, variable; ovate or ovate oblong or oblong lanceolate, acute at apex, rounded or narrowed or sometimes cuneate at base; both surfaces glabrous; margins recurved; 3 to 5 in. long, 1.25 to 1.75 in. broad; midrib slender. Faint, as are the nerves generally, even when dry; main nerves about 5 to 6 pairs, the lowest pair starting from the base and curving along the margin, the other nearly at right angles, quickly branching and joining the marginal one; reticulations irregular netted; petiole very thick, .25 to .75 in. long, broad at the junction of the blade. Umbels many-flowered, on .25 to .75 in. long rachises with small tubercles at the ends of stout lateral peduncles 1 to 4 in. long; pedicels slender, .5 to .75 in. long; buds flattened, .25 in. in diam. Calyx papillose without; lobes oblong, acute, .06 in. long; no scales. Corolla rugose without, puberulous within; lobes cordate, almost 3-pointed, points acuminate, especially the end one. Corona of 5 shining inflated processes; lower lobe horizontal, ovate, sharply acute, concave on the upper surface with a median ridge, 2 valved below; upper lobe on acute erect tooth, shorter than the anthers. Staminal-column short, inserted on the tube of the corolla, wings of filaments ear like; anther cells divaricate; appendages scarious, acuminate, incurved; pollen-masses flattened, oblong, truncate at top; attached by short thick caudicles to the 3 lobed rounded rather large pollen carriers. Style apex membranous, 5 angled; tip long conical. Fruit not known.

Kedah: at Pulau Songsong, Curtis. Penang; Curtis; at Pulau Tikus, Ridley 9476. Perak: at Maxwell's Hill, Ridley 5519. Singapore: at Grange Road, Ridley 10358.

To this species belongs Curtis 2355 from Kuala Lumpor, Selangor, which has, however, smaller leaves, but with no flowers.

Leaves moderate sized, usually under 5 in. in length and 1.75 in. in breadth; main nerves nearly at right angles to the midrib, rather faint on both surfaces…18. H. Ridleyi.

Notation on this species: Here again King and Gamble were familiar with H. acuta (Hoya parasitica) having made a detailed and complete description in 1908 and did not negate that description here.

Even though I do not think the 1908 description is of H. acuta, this description is completely different in detail. I feel quite sure this description is of the specie we now call in the trade H. acuta, with a puberulous inner corolla surface: a species so common in this lowland region.

I hereby reinstate Hoya ridleyi King & Gamble to full species status. Journal of the Royal Asiatic Society, Bengal Branch 74 (1903) 575. "Flora of the Malayan Peninsula" King & Gamble. 18. Hoya Ridleyi, King & Gamble, n. sp.

The picture drawing below is a type listed in The Botanical Register 9 (1826) by Lindley (Publication #2 listed above)

H. pallida Bot Reg XL 1826

PHOTO GALLERY DESCRIPTIONS

Top Left

H, cagayanensis Schltr. (Burton):...A certain amount of confusion has dogged the path of this species for the past 10 years and I'm afraid I am the one that was responsible for the confusion. I based an identification strictly on the pollinarium of the plant that I knew only as CMF-8, an unknown species that was discovered in the Philippines in the early 1990's by Charles Marden Fitch. The plant shown here is considered to be the true H. cagayanensis discovered by Monina Siar of The Philippines and confirmed by Dale Kloppenburg. I have since discovered that there are several more, very different Philippine hoya species that share the same basic pollinium structure. ..*Photo by Monina Siar*

Top Right

H. flagellata *Kerr:* .. A very small growing species and close relative of H. caudata Hooker. I was expecting the flower on this plant to look very much like H. caudata but outside of being able to tell that they are related, the similarity ends there. The leaves are quite small and shaped very different than H. caudata but they both have the same cardboard texture. There are no veins visible on either one. The main difference that I see are in the flowers. If you look carefully at the photo, the corolla (flower petals) form a cup somewhat like H. campanulata, then fold under at the tips. The dark red corona is buried inside of this cup but very visible with 1 ½ inch stamens coming out of the center. *Photo by Ann Wayman*

Center Left

H. cumingiana *Decaisne*:..In the gallery photos this time, I have tried to show some of the variation displayed in the corona's (crown) of the different species. In H. cumingiana the crown is huge and covers almost the entire top of the flower petals. With a fairly cheap magnifying glass you can see all kinds of wonders etched within the characteristics of even the smallest hoya flowers. The flower colors on this species are simply awesome and captured to perfection by the photographer...*Christina Karlsson*

Center Right

H. caudata *Hooker*...A close relative of the above species for comparison. The flowers of this species open fully and the corona is very prominently displayed. The stamens coming out of the center are only about ¼ inch long and the flower petals have long hairs all over. The leaves are at least 5 times larger, and the flowers also. This has always been one of my favorite hoyas because it is so very different. The culture of this plant is a little different in that it must be kept slightly on the dry side...*Photo by Ann Wayman*

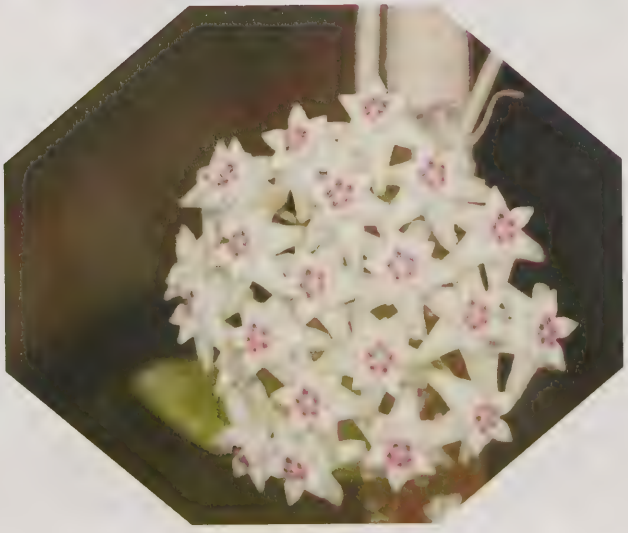
Bottom Left

H. loheri Kloppenburg:...Everything about the crown of this beautiful little flower screams "Asian pagoda" The corona sits atop of the petals like a separate roof structure connected only by a short column. The flower color of this species is no doubt its most appealing characteristic, being a breath taking, waxy textured, burnt orange. The leaves are rolled lengthwise and grow straight upward with no sign of cascading. *Photo by Ann Wayman*

Bottom Right

H. limoniaca S. Moore...A graceful, neat growing plant with starry flower clusters. The corona on this plant stands very tall and has an extremely rigid texture. The flowers open pale mint green then turn to yellow and finally white. They are long lasting, and a great bloomer. If this is in fact H. limoniaca it is from "The Isle of Pines" off the Southern tip of the long main Island of New Caledonia....*Photo by Ann Wayman*

HOYA PHOTO GALLERY



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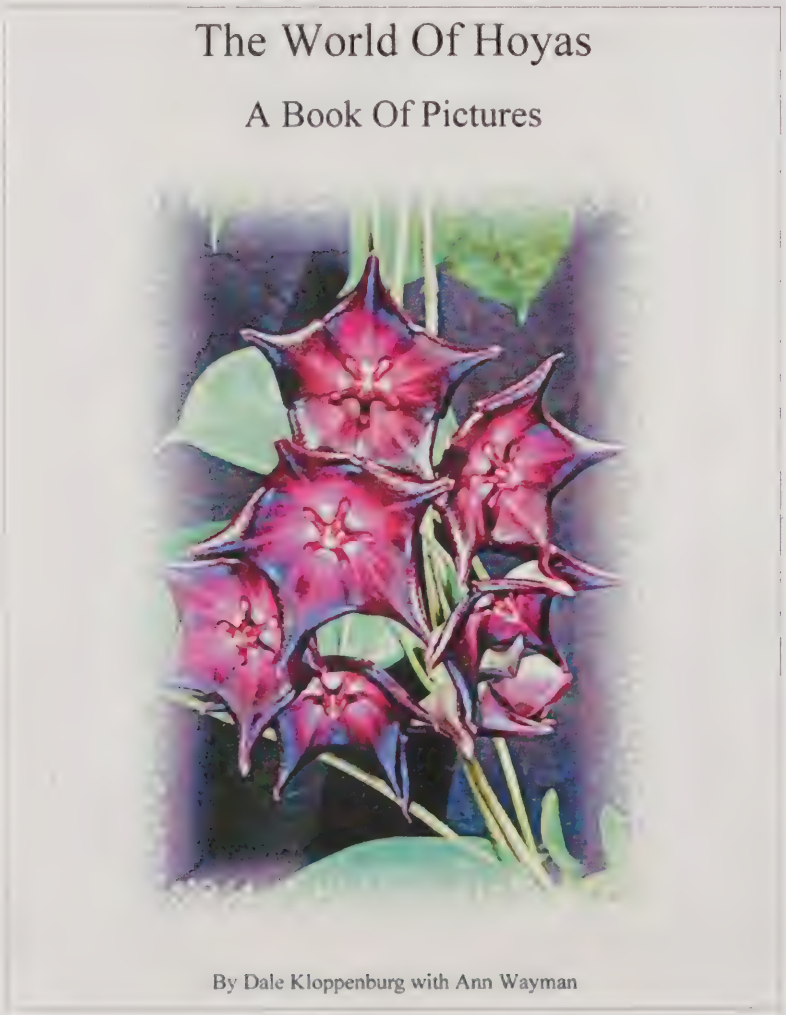

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H. curtisii with unopened flower umbel

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Hoya glabra Schlechter
Photo by Ann Wayman

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Back Cover: Hoya loyceandrewsiana (leaf & flower umbel) Photo by Henry Raphael

Hoya glabra Schlechter 1908

Type description:

In Beiblatt zu den Botanischen Jahrbücher #92 40 (1908) 13. R. Schlechter. Hoya glabra Schltr. n. sp.; volubilis, alte scandens, ramosa, epiphytica; ramis ramulisque filiformibus elongatis, glabris, laxe foliatis; foliis patulis ovatis acuminatis, basi rotundatis, glabris, textura carnosis, 14—16 cm longis, infra medium 7.5—9.5 cm latis, nervis 3 primariis praecipue conspicuis, petiolo crasso 2.5—3.2 cm longo; cymis pedunculatis umbelliformibus 15—25 floris; pedunculo crasso tereti, glabro, 5—6 cm longo, pedicellis filiformibus glabris, 1.5—2 cm longis, glabris; floribus in genere mediocribus purpureis; calycis segmentis ovatis obtusis, glabris, margine tantum minutissime ciliolatis, vix 0.2 cm longis, corolla subrotata c. 1 cm diametiente, usque infra medium 5-lobata, lobis ovatis acutis reflexis, apice tantum subinconspicue puberulis, ceterum glabris; coronae phyllis carnosis horizontalibus, superne ellipticis antice breviter rostratis, callo elliptico infra apicem ornatis, subtus oblongis obtusis, medio late foveolatis; antheris trapezoideis, appendice hyalina ovata obtusa, coronae folia vix excedente; polliniis oblique cuneato-oblongoideis, margine exteriore carinato-marginatis, translatoribus perbrevibus, retinaculo minuto; stigmatis capite conico. Borneo: auf Bäumen in der Wäldern an Long-Wahau (R. Schlechter n. 13458, blühend im August 1901). Mit H. latifolia Bl. am Nächsten verwandt.

Translation: twining, high climbing, branched, epiphytic, branches and branchlets threadlike elongate, flexible, glabrous, loosely leaved; leaves outspread ovate acuminate, base rounded, glabrous, fleshy texture, 14—16 cm long in the middle 7.5—9.5 cm wide, 3 primary nerves especially conspicuous, petiole thick 2.5—3.2 cm long; cymes pedunculate formed like umbels of 15—25 flowers; peduncle thick round, glabrous, 5—6 cm long, pedicels threadlike glabrous, 1.5—2 cm long, glabrous; flowers midsize in the genus, purple; calyx segments ovate, obtuse, glabris, margines only minutely ciliate, barely 0.2 cm long. corolla somewhat rotate about 1 cm in diameter, 5 lobed to below the middle, lobes ovate acute apex reflexed, apexes barely somewhat conspicuously puberous, otherwise glabrous; leaflets of the corona fleshy horizontal, above elliptic in front briefly beaked, with a beautiful ornate elliptic apex below, below oblong obtuse, in the middle broadly channeled, anthers trapezoidal appendages ovate hyaline leaflets of corona barely exceeding; pollinia oblique cuneate-oblong, exterior margines with keels, translators very small, retinaculum minute, stigma head conic.

Borneo: on trees in the forest near long-Wahau (Schlechter n. 13458, blooming in August 1901) Most closely allied to H. latifolia Blume.*

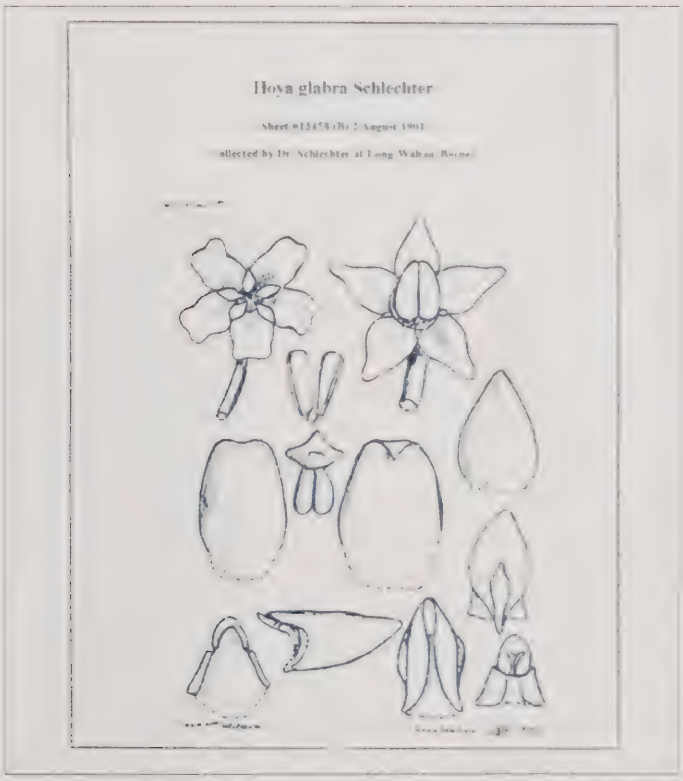
Compilers Notation: * Blume did not name a *H. latifolia*, the species was named by George Don.

Other descriptions. In Journal of the Royal Asiatic Society Straits Branch (Spec. #) (1921) 506. H. Ridley. 5. Hoya glabra Schltr. in Engl. Bot. Jarb. 40 (1908) Beibl.92: 14. Borneo. Schlechter 13458. Endemic.

In The Asclepiadaceous Works of Friedrich Richard Rudolf Schlechter (1992) 30. A. Nicholas. H. glabra Schlechter (Schlechter 13458) – 14. In Dr. Schlechter's Hoya Species (1993) 68-69.

(Translation) R. D. Kloppenburg. Hoya glabra Schlechter Published by Dr. R. Schlechter in: Botanische Jahrbücher, Beiblatt 40 #92 (1908) 13 "Borneo Is.".

Twining high climber, branched, epiphytic; branches and branchlets threadlike, elongate, flexible, glabrous, loosely leaved; leaves outspread ovate acuminate, with the base rounded, glabrous, texture leathery, 14-16 cm. long, below the middle 7.5-9.5 cm. wide, with the 3 primary nerves especially conspicuous; petiole thick 2.5-3.2 cm. long; cymes pedunculate, shaped like umbels, 15-25 flowered,; peduncle thick, round, glabrous 5-6 cm. long, pedicels threadlike, glabrous 1.5-2 cm. long, glabrous; flowers in general midsize, purplish; with the segments of the calyx ovate obtuse, glabrous, margins to a degree only, ciliate, barely 0.2 cm. long; corolla somewhat rotate about 1 cm. in diameter, 5 lobed all the way to below the middle, lobes ovate acute, apex reflexed, with the tip to a degree only somewhat inconspicuously puberulous (downy), otherwise glabrous; with the scales of the corona fleshy, horizontal, above the middle broadly pitted; anthers trapezoidal, with the appendages hyaline, ovate obtuse, with the apex of the corona barely exceeding; pollinia oblique cuneate-oblong, exterior margin keeled, translators very short, retinaculum minute; with the head of the stigma conic. Borneo: On trees in the Forest at Long-Wahau (Schlechter #13458, flowering in August 1911). Most closely allied with H. latifolia Blume.



A Love Affair with Hoya glabra *Schlechter*

My first meeting with Hoya glabra was in 1992 at a Hoya Organization meeting in Vista, California. Several of us out-of-towners had arrived for the meeting the day before and were waiting anxiously for the rest of the group to arrive. Dale Kloppenburg drove down from his home in Fresno, California and Ted Green was due in on a flight from his home In Hawaai with a huge bundle of hoya cuttings that he cut from plants that he had been growing in his hoya jungle from cuttings collected a few summers before on a trip to Malaysia. One of our hosts went to pick Ted up at the airport and the rest of us stood around like a bunch of cattle at the watering-hole waiting to see what wonderful new things Ted had brought with him.

At this point, I had only been collecting the really rare and unusual hoyas for five or six years and only had access to what was available from the mainstream nurseries. I certainly knew that there were many hoyas that I had only read about but either didn't know where to get them or couldn't afford them even if I did. That was a scene that was about to change.

As Ted stepped out of the car that had picked him up, he was literally mobbed by about five of us dedicated hoya growers. No, we didn't knock him out and take his cuttings but we all made sure that we got first pick of the ones that caught our eye. I managed to get five very choice cuttings, of which three turned out to be new species, and then there was this huge leaved thing that turned out to be H. glabra. I just happened to like it because large leaves always interest me. A mature plant of this species has leaves that are almost always at least 8 inches long and can be up to 12 inches long and perhaps even longer. Ted sent me a photo of one of the leaves and you can see how large it is compared to his thumb that is visable in the photo. I nick named this plant "The Gaudy Giant" (meaning flamboyant or flashy) for lack of a different name at the time . In due time we did discover its true identity. My cutting of this species grew and became a large and very beautiful plant and even bloomed in a very short period of time. I believe it was about eighteen months, and to this day I can never forget my surprise to see the gorgeous color of these perfectly globe shaped flower umbels. The description of Schlechter calls them purple but I call them a dark lavender. Actually just the corona lobes are this beautiful lavender color and the corolla petals are flesh colored.

Oh, I know! it's true. Every hoya that blooms becomes one of my favorites, I just can't help myself.

I LOVE THEM ALL!

by Ann Wayman

The Species Of Sabah

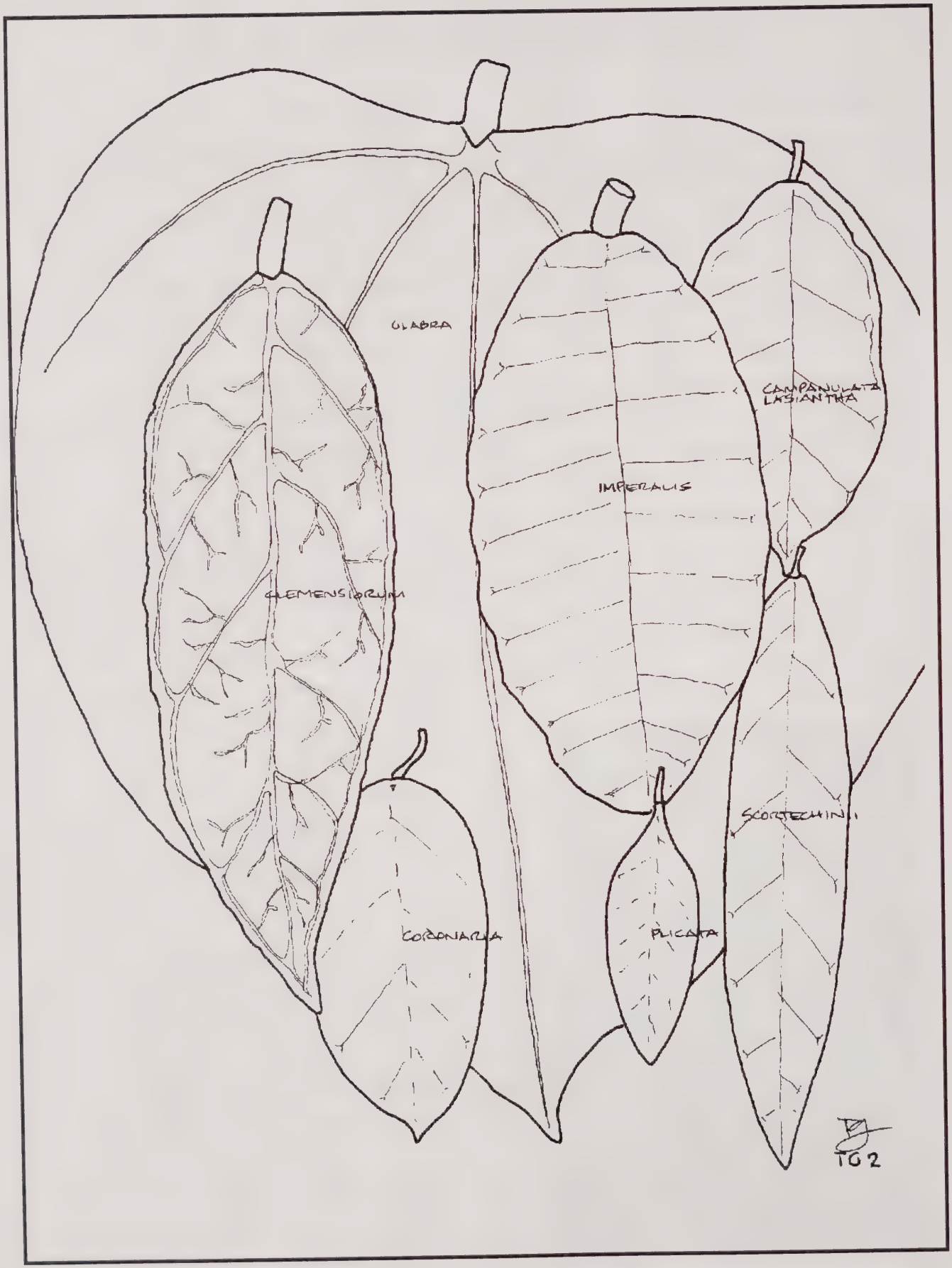
- acicularis Green
- acutaHaworth
- campanulata Blume
- callistophyla Green
- clemensiorum Green
- coriacea Blume
- coronaria Blume
- diversifolia Blume
- forbesii King & Gamble
- fraterna Blume
- gildingii Kloppenburg
- glabra Schlechter
- imperialis Lindley
- kloppenburgii Green
- lacunosa Blume
- lasiantha Blume ex Korthals
- meredithii Green
- mitrata Kerr
- monetteae Green
- nabawanensis Kloppenburg & Wiberg
- nyhuusiae Kloppenburg
- obtusifoliodes (tent) Gilding & Green
- phyllura Schwartz
- plicata King & Gamble
- scortechinii King & Gamble
- sigillatis Green
- sipitangensis Kloppenburg & Kloppenburg
- spartiodes (Kuntze) Kloppenburg
- telosmoides Omlor
- vitellina Blume
- vitellinoides Brink f.
- walleniana Kloppenburg & Nyhuus
- waymaniae Kloppenburg
- rundumensis (tent)

Possible ones from the Philippines (Palawan and Sulu Sea area) and Sarawak but haven't been found in Sabah yet:

- ciliata Elmer ex Burton
- crassicaulis Elmer ex Kloppenburg
- curtisii King and Gamble
- darwinii Loher
- imbricata Decne
- kastbergii, Kloppenburg
- golamcoiana Kloppenburg

In this 2nd quarter of 2008, we will be starting a series of hoya species from different countries. I chose to begin with Sabah due to the material that I have available starting with the excellent drawings of leaves from Ted Green. I also find that I have among my arsenal of hoya photos nearly all of the pictures of the hoyas from this area of the world. The ones that I didn't have are readily available from the very talented photographers among the members of The IHAwho are always willing to share their photos with us. Hopefully we will in the near future be able to acquire the pictures that were not available at this time.

I am not going to try to give detailed descriptions of these species. The photos tell it all.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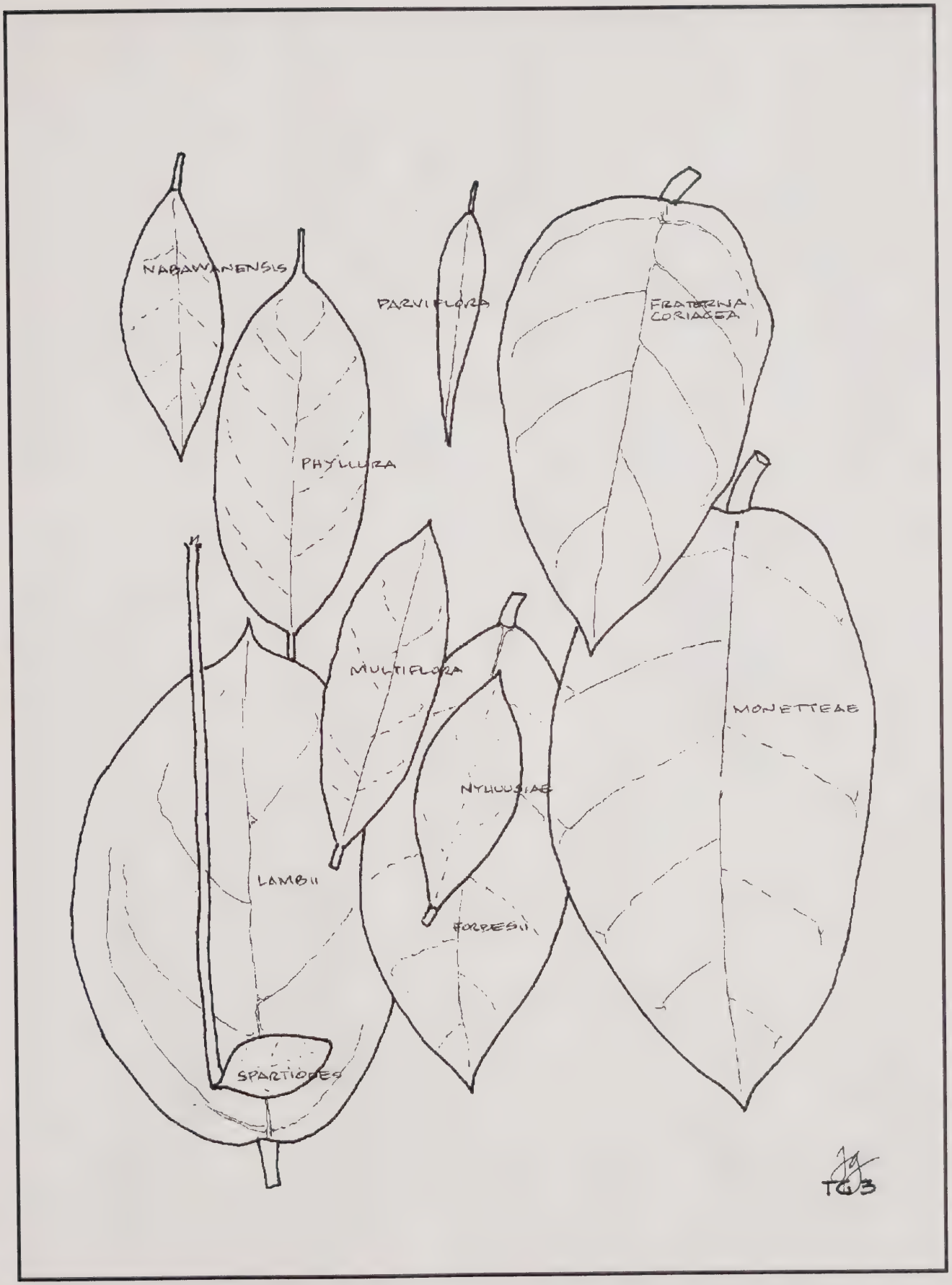
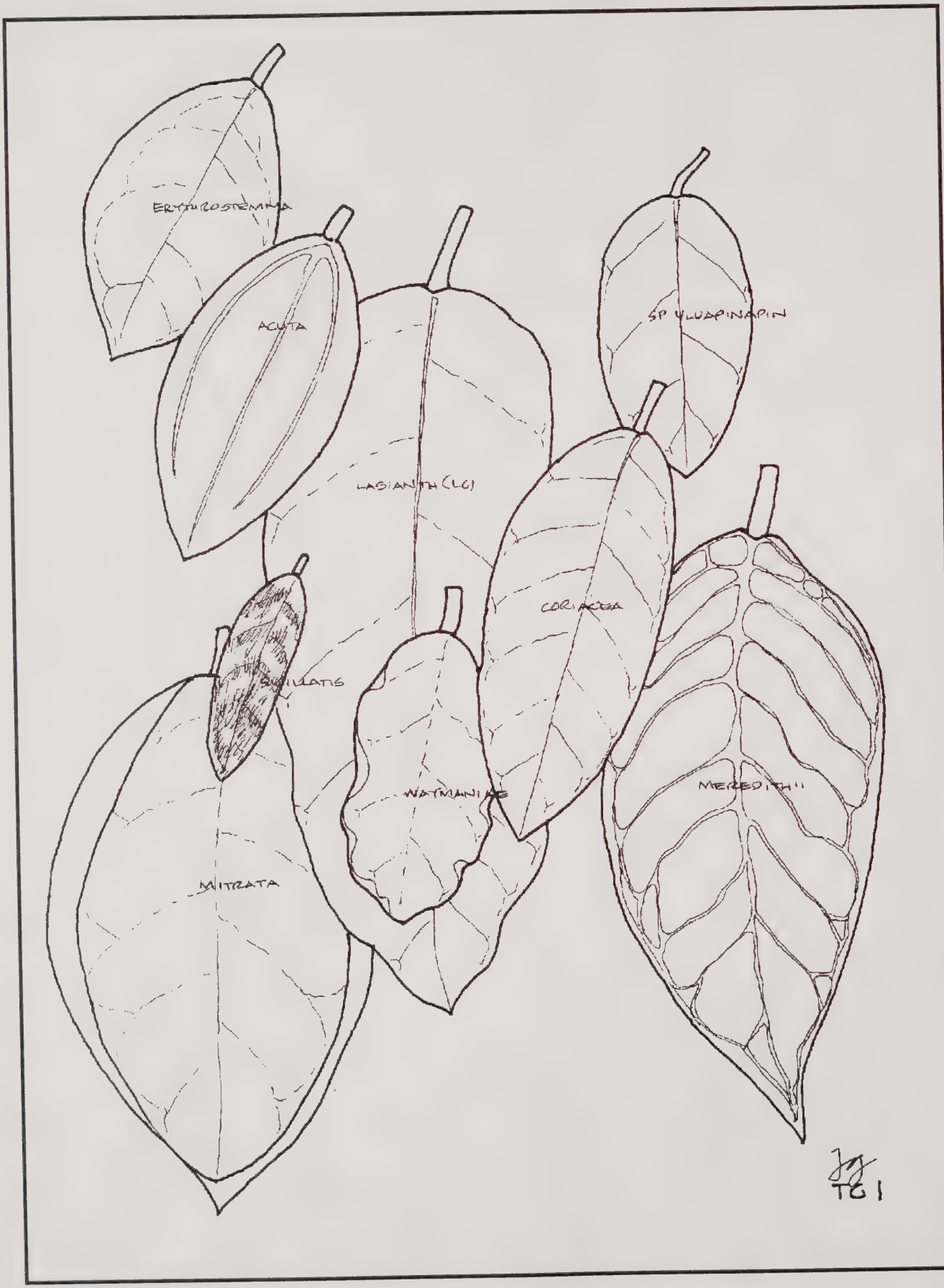
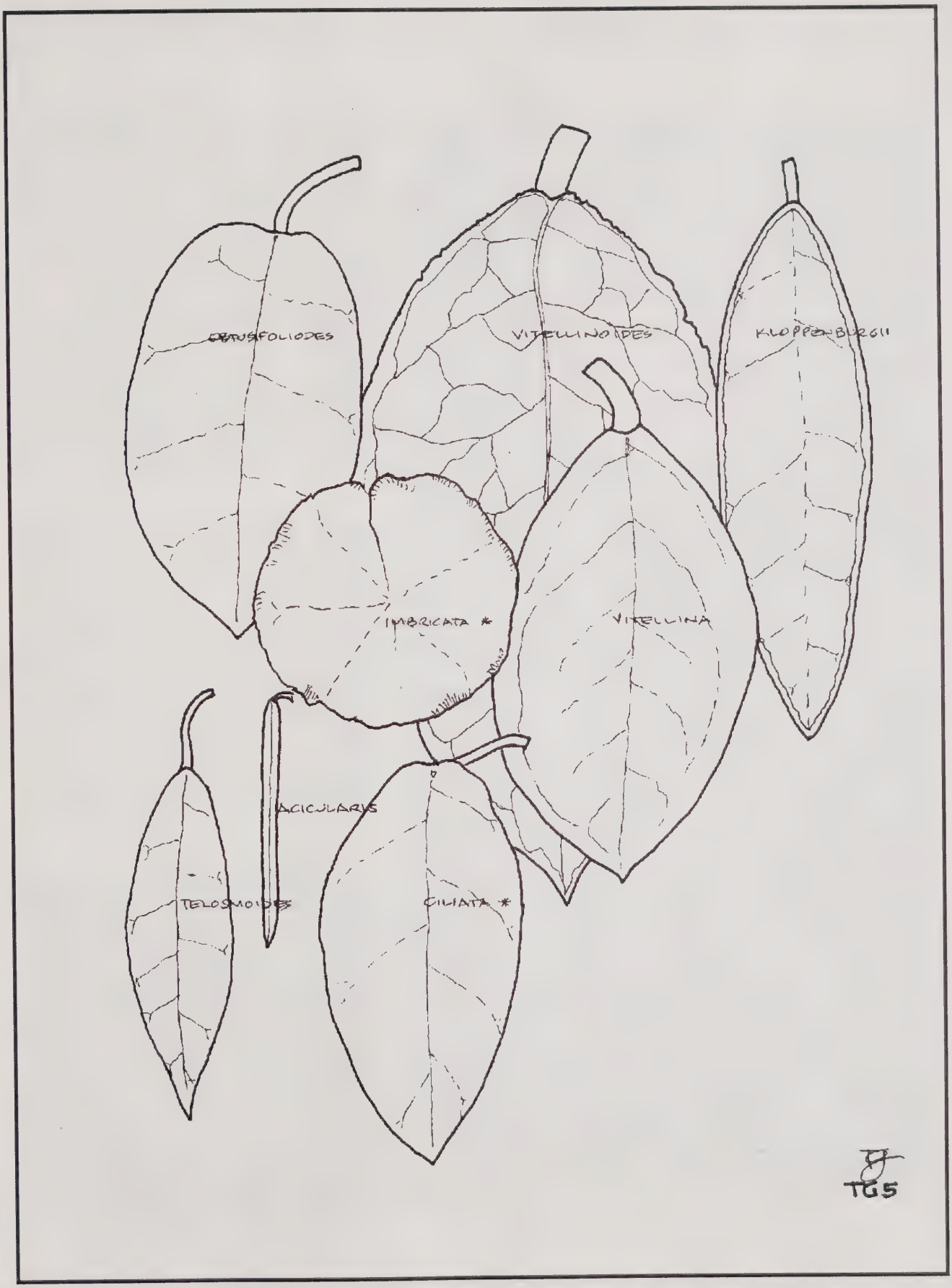
LASIANTHA
IMPERIALIS
CLEMENSIORUM
SCORTECHINII
CORONARIA
PLICATA
TG 2


NABAWANENSIS
PARVIFLORA
FRATERNA
CORIACEA
PHYLLURA
MULTIFLORA
MONETTEAE
NYHUUSIAE
LAMBII
FORBESII
SPARTIOIDES
TGB


ERYTHROSTEMMA
ACUTA
SP YUDAPINAPIN
LASIANTH (LG)
CORIACEA
SUBILATIS
WATMANIAE
MEREDITH II
MITRATA
TG 1


OBTUSIFOLIODES
VITELLINOIDES
KLOPPENBURGII
IMBRICATA *
VITELLINA
ACICULARIS
TELOSMOIDES
CILIATA *
TGS

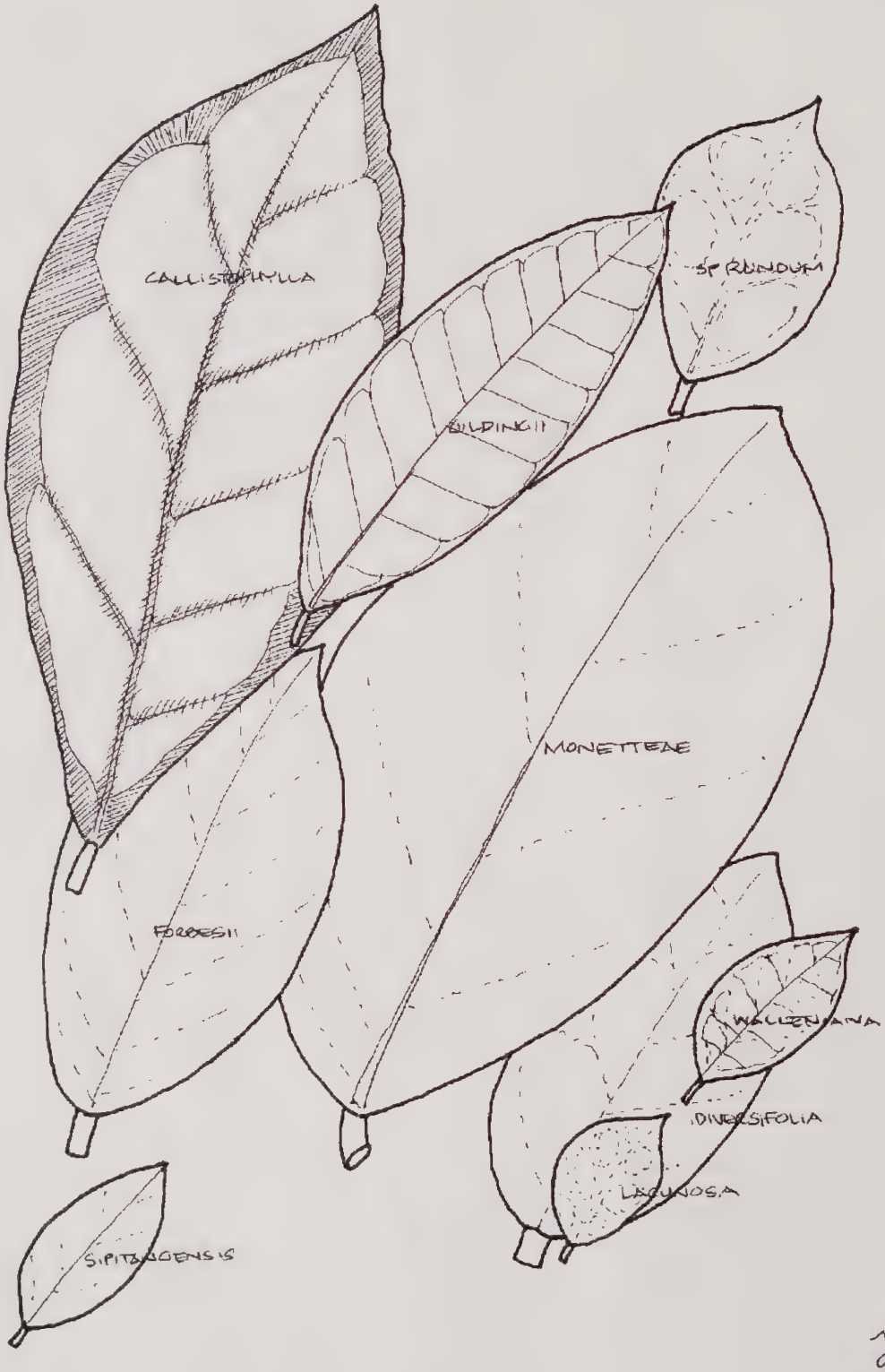

CALLISTOPHYLLA
SP. RUNDUM
GILDINGII
MONETTEAE
FORBESII
WALLICHIANA
DIVERSIFOLIA
LAGUNOSA
SIPITBOENSIS
TG 4

PHOTO GALLERY (THE SPECIES OF SABAH)

H. kloppenburgii (Photo by Ted Green)

H. vitellina (Photo by Ann Wayman)

H. sigillatis (Photo by Ted Green)

H. diversifolia (Photo by Aloha Hoya Team)

H. coriacea (Photo by Ann Wayman)

H. campanulata (Photo by Ted Green)

H. plicata (Photo by Ann Wayman)

H. lacunosa (Photo by Ann Wayman)

H. kenejiana (Photo by Ubon Paradee)

H. clemensiorum (Photo by Ann)

H. lasiantha (Photo by Ann Wayman)

H. mitrata (Photo by Ann Wayman)

H. imperialis (Photo by Ted Green)

H. waymaniae (Photo by Ann Strahm)

H. meredithii (Photo by Ann Wayman)

H. vitellinoides (Photo by Ann Wayman)

H. rundumensis (Photo on left, full face shot of flowers, Photo on right, foliage and close-up of flowering habit) Photo on left by Ann Wayman photo on right by Ted Green.

H. walleniana (Photo by Ann)

H. parvifolia (Photo by Ann)

H. sipitangensis (Photographer unknown)

H. spartioides (Photo by Torill Nyhuus)

H. scortechini (Leaves & Flowers) Photos by Kim Yap

H. fraterna (The True species) Photo by Ann Strahm

Hoya callistophylla (Foliage Photo by Ann Wayman, Flower Photo by Carol Noel)

H. loyceandrewsiana *Green*

Photo by Ann Wayman

H. sp. Diversifolia B

About 1968, I received from Loyce Andrews of Granbury, Texas, a cutting of a hoya she called Diversifolia B - for what reason I don't know for it is nothing like H. diversifolia Blume. I asked Loyce about this plant last year and she said that her records were unfortunately destroyed a few years ago and she doesn't remember much about it.

Loyces' collection came from many sources and I have a suspicion that this plant came from one of her trades with the University Botanic Garden of Utrecht, Holland. I wrote to Utrecht but have gotten no response. Who knows where Utrecht got it but by its growth, under my outdoor, natural conditions, I believe that it came from a monsoonal area, one that goes through an extended dry season, such as the Tenasserims (The range between Burma and Thailand) or Southern Indonesia. I bet on the Tenasserims for it seems to have the rugged growth of some of those from that area - H. subquintuplinervis, pachyclada, rigida and some forms of kerri.

At one time, I considered Diversifolia B to be a species variation of Schlechters' H. dolichosparte from Indonesia but it differs on several points. Schlechters' written description could be our Diversifolia B but his herbarium sheet (from Berlin) with its sketches shows a different species - one without the large, thick leaves, of a slightly dissimilar shape and with different flowers. Some branches of my plant, under certain conditions (but very seldom), produce leaves and growth that resemble that of Schlechters' herbarium sheet, but never the flowers.

In my nearly 30 years of study of the hoyas, I have looked at hundreds of sheets in about 10 herbaria around the world, read all of the original descriptions and have not found Loyces' Diversifolia B. Based on my fruitless search, I propose that the plant in our collections, now known as H. sp. Diversifolia B be named Hoya Loyceandrewsiana, after Loyce Andrews, The long time collector of these interesting plants.

Hoya loyceandrewsiana *Green*, New species (Asclepidaceae)

HOYA LOYCEANDREWSIANA Green

Affinis Hoya dolichosparte Schl. sed robustiore incremento et foliis maioribus et floribus maioribus glabricorollis differt.

Translation: Allied to H. dolichosparte Schl. but differs in that the growth is more robust with larger leaves, larger flowers with a glabrous corolla.

A robust vine, readily rooting along the internodes; loosely leafed with flat to conduplicate leaf blades, 10-20 cm wide, 15-25 cm long; leaf petiole 1 cm thick x 1x8 cm long with a thick callus on the dorsal side at the blade attachment; leaf blade thick, 2 to 5 mm, ovate to widely cordate with acute tip and obtuse to cordate base; palmately veined with 3 major veins, 2 secondary palmate veins and network of tertiary veins; peduncle thick, 2-8 cm long, usually presented vertically, bearing approximately 50-100 flowers on equal pedicels, 20 mm long, creating a globose umbel, up to 15 cm in diameter; calyx 5 mm in diameter, individual lobes ovate-deltoid 1 mm long, reddish; corolla rotate, 15-20 mm in diameter, spreading with reflexed, glabrous, triangular lobes with recurved tip, ivory-white, inner lobes may be yellow; corona 8 mm in diameter, ivory-white, coronal outer and inner lobes acute, top convex, ridged, overall ascending about 20 degrees. Pollinia golden, oblong with rounded end, shoulder down outer edge, short, thick, twisted translator and dark red, short retinaculum. Follicle not seen.

This plant has milky white sap. Flower fragrance is sweet, pleasant and similar to those of the H. acuta complex. Flowers last 2 to 4 days.

Collection: Area of origin unknown. From Hort. Green 9301, TYPE Bish. duplicate NYBG.

Culture:

From that original small cutting that I received from Loyce, I have maintained two large plants and subsequently sent cuttings to collectors all over the world. More people have sought this plant than any other hoya for they want to see the heaviest leafed hoya. I hope that these collectors understand that this plant needs very bright light and room to show its natural growth and to flower regularly.

I grow my plants in the open, here in Kaaawa, exposed to at least 75% sunlight, 50% or more humidity, planted in firbark waste in 10" cement pots. I fertilize with slow release fertilizer every 3 months and fish emulsion fertilizer every week. I give supplemental water if it has not rained lately. I give no special treatment to these plants but I do try to grow them on the dry side...and they really perform! In fact, it is a continual job to entertwine the robust new stems so that they do not take over the world.

I believe that, after all this time, our Div B should have a proper name, and that proper name should be Loyce Andrews' Hoya...(ie) H. loyceandrewsiana

Ted Green

Green: Plant Research

Kaaawa, Hawaii

Legend for Drawing:

A General Growth; B Flower, flattened out; C Flower, profile view; D Corona lobe, ventral view; E Corona lobe, dorsal view; F Corona lobe, profile view; G Calyx; and, H Pollinarium.

Editors Note:

Of all the hoya species that I grow, this has perhaps been the most rewarding for flowers, and also the most enigmatic as to what it might be. I, along with a handful or so researchers who like searching out puzzles and solving them have gone over and over every piece of hoya literature available trying to identify this species. Some written descriptions have come close but never close enough to convince 100% any astute student of hoya taxonomy of its actual identity. The very thick peduncles are 4" to 6" long, dark dull purple in color and are held absolutely upright with a huge umbel of 70 or more flowers that can remain in the bud stage for several weeks (this photo shows unopened buds) before finally opening...all at once, within a few minute time frame.

If this new name seems to be a tongue twister...just say Loyce Andrews...then put iana on the end.

Ann Wayman

Valid publication of Hoya loyceandrewsiana T. Green by Ted Green

It has been brought to my attention that an error was made in the publication of Hoya loyceandrewsiana T Green, in 1994, and it must be republished to make the name valid. The reason was that no dried herbarium specimen existed at that time. This publication is to correct that error.

Hoya loyceandrewsiana T. Green (Asclepiadaceae) was published in Fraterna 1994 (4): 4 (3-5 figs). 1994. The Holotype deposited at BISH and the Isotype at NY.

The Type specimens are Green 9301, collected in 1995 (Holotype BISH; Isotype NY).

The Isotype specimen sent to NYBG by Bishop Museum Herbarium was Green 9301, collected in 1995. Isotype label to NY was:

Hoya loyceandrewsiana T. Green

Kaawa, Green Plant Research nursery. 21 33 N 157 51 W

Cultivated plant grown in nursery. Robust climber; leaves thick, ovate to broadly cordate; inflorescence peduncle vertical, bearing 50-100 sweetly scented flowers; corollas ivory-white. Wild provenance: unknown.

Coll. T. Green 9301 1995

det. T. Green 1995

Accession 1995.189 BISH 685731

Latin and description are in the first publication.

Hoya loyceandrewsiana T. Green

The original publication from 1994 is being reproduced here in the preceding 3 pages.

Ted Green, Green: Plant Research

Kaaawa, Hawaii 5/1/08

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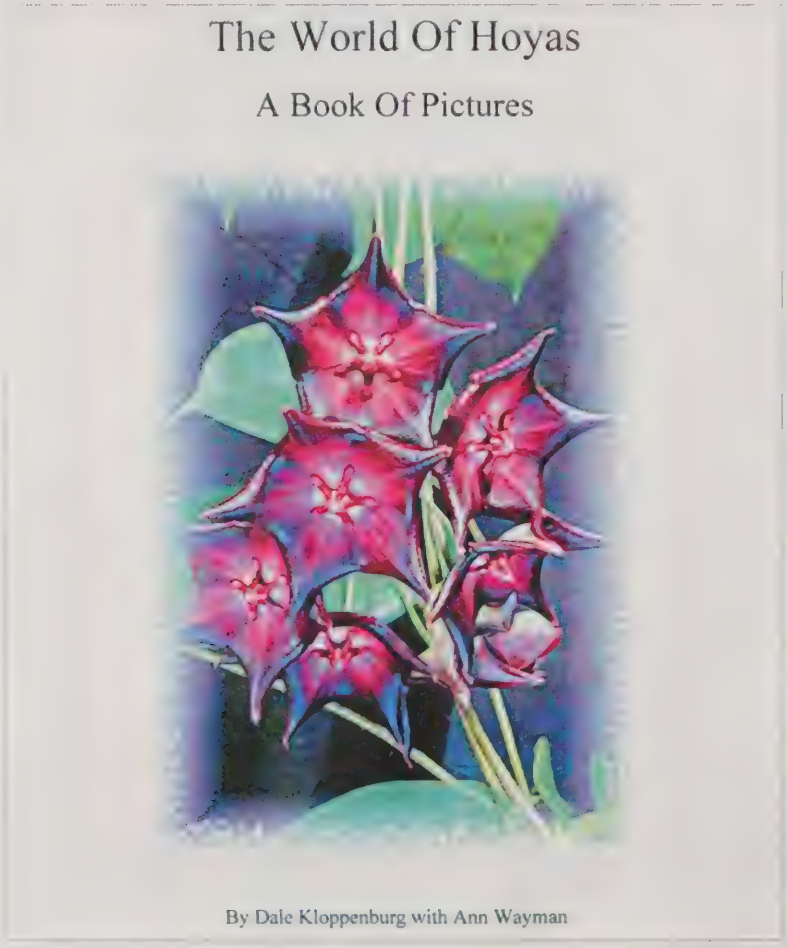
Some of the very best photographers in our organization have participated in the publishing of this book with many beautiful photographs, all labeled and correctly identified to the best of our knowledge.

If you have ever wondered what an entire plant, or even the leaves and growth pattern looks like when you see an especially beautiful umbel of hoya flowers, now is your chance. This beautiful book has been professionally bound in perfect binding with a semi-soft vinyl cover. contains 260 pages with several blank pages at the back for notes. Available now. Just $48.00 for the book plus $2.85 book rate postage in the U.S. Postage for priority mail anywhere else in the world is at present $11.00 U.S.



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Odds N Ends

Important Please Read!

This is the area of our Fraterna Magazine where we get to correct, add to, or in other words, fix what needs fixing. It's also the place where I get to speak directly to our members concerning problems that needs to be addressed.

The first on this list of immediate concerns is the problem of members who neglect to renew on time. Every address label has the expiration date in the right hand corner of the envelope, please check this date before throwing out your envelope. In the past I have continued to send at least one more issue after the expiration date. This is a practice that will be discontinued. Due to the increasing cost of fuel, the price of everything that is involved with putting out a newsletter has skyrocketed to a point that we no longer have the funds available to print and mail magazines that have exceeded their expiration date.

On a happier note: We now have all Fraterna "back issues" from the very first issue in April 1988 through 4th quarter 2007 on disk in pdf format. There are 80 issues and the price is $200.00 ($2.50 per issue) mailed postage paid anywhere in the world. If you are interested in certain issues, I can copy off individual issues (a minimum of 10 issues) and burn them to disk, however the cost for special issue orders are $3.50 per issue. Order from address below.

Once again we are offereing beautiful Hoya Note Cards to our members. The last time, these cards were made for a special membership drive (a set of 12 cards free for a 3 year membership). This time we are offering them for sale to our members. I am aware that very few people write notes anymore but we all send cards, and I challenge anyone to find a high quality card/w envelope and a gorgeous flower photo anywhere for less than $5.00. These are sets of 12, 8 ½ x 11 half fold all purpose cards with envelope. Very high quality. All have a different hoya photo. The inside of card is blank for note writing or special occassion greeting. These sets sell for $35.00 plus $2.85 postage in the U.S. Overseas orders please check for postage rates.

We accept pay pal, account name hoyaannie@aol.com or mail check, money order or credit card information (plus 3 digit security code from back of card) to IHA 4057 Carlton Ave. Central Point, Oregon 97502

H. loyceandrewsiana T. Green

Single leaf and flower umbel (*Photo by Henry Raphael)*

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Errors of fact may occur from time to time in "Fraterna", it is the policy of the IHA to publish corrections of fact, but will not comment on matters of opinion expressed in other publications.

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Back Cover:

Front of Hortus Botanicus in Berlin

Visiting the Hortus Botanicus Berlin (Dahlem)

Last year I shared with you in Fraterna my visit with the oldest Hortus Botanicus in the world. This year in February, we visited the world famous Botanical Gardens in Dahlem Berlin (Germany).

Every year a group of friends try to visit a European capitol or other city of interest. Whenever we are abroad, we have made it a habit to visit the local public plants collections and Aquariums.

Our friends have accepted and adapted to our routine of visiting the Botanical Gardens and Greenhouses every time we travel together. The rest of that day is to be spent anyway they choose. They always seem to enjoy the beautiful buildings, gardens and tropical atmosphere as much as we do.

In February the gardens are usually not the place to be in the Northern hemisphere but inside the tropical and Mediteranean greenhouses there is a lot to see and enjoy year around.

The Victorian Glasshouses were built around 1900 and modeled after the same style of the famous Kew Gardens in London.

They were unfortunately under reconstruction the time we visited, as is much of Berlin. It is one giant construction site after "Die Wende" the fall of The Wall and reuniting East and West Germany. It must be the biggest enterprise in the Western World. Billions of Euro's invested in practically everything, towering skyscrapers, trainstations and railways, the UBahn (Underground), historical buildings, parks monuments etc...

The Glasshouses in Dahlem are renovated and restored to their glorious former state. The biggest center piece the "Tropenhaus" or Tropical house is 60x30 meters and a towering 25 meters high. This was the only one not yet open to the public. But the adjacent 12-15 greenhouses are big enough to spend some lovely warm hours in the different continents of the world.

I found only three different species of Hoya, my main focus of interest. One was a huge, spectacular shrub-like species labeled Hoya sp. Nr.1 (whatever that may be)! The foliage looked like H. cummingiana. Besides that one, I only found Hoya Australis and Hoya Carnosa. This year besides visiting spectacular Berlin, capitol of neighboring Germany, and the interesting residents of Berlin, I plan to send some new and different hoya species to the Greenhouse Chief.

There were several Dischidia's in the different sections, huge clusters sometimes, and some very tiny specimens in terrariums. The nicest (of which I was given a piece by the man watering this lush jungle with a hose) was Dischidia Balaensis covering much of a large tree. Very thick succulent leaves. It took some time to root but it picked up nicely and started to grow. A pity it isn't a hoya. I know there is Hoya Balaensis but that is a different one.

Over the last few years I given these Souvenir hoyas a special place in my greenhouse. Every time reminding me of my visits abroad and the nice persons who gave me the cutting. "Hoyas with a story"..

Maybe next time there will be new and other hoyas to be found in public collections. I have plans for visiting many more places. Wouldn't it be a great idea for other members to join in and share their memories of travels in pursuit of Hoya Havens.

Gerbrand Caspers (Netherlands)

Front of Museum

Aerial View of Museum

Hoya sp. NR-1 or H. cummingiana

Inside Tropical House

Inside Tree House

H. cummingiana, australis & carnosa

Inside Fern House

Our Cover Story Hoya hypolasia *Schlechter*

In Dr. Schlechter's Hoya Species (1993) 78-79. R. D. Kloppenburg. (Translation). Hoya hypolasia Schlechter. A high climbing half shrub with few branches. Branches threadlike, flexible, loosely leaved, round, at first minutely and softly puberulous, soon glabrous, occupied with numerous wart shaped lenticels. Leaves spreading or outspread, petiolate, lanceolate, acuminate, base somewhat cordate, leathery texture, glabrous above, lucid, shortly and densely puberulous below, petiole grooved above, very shortly and softly puberulous. Inflorescences shaped like an umbel, about 10 flowered, long pedunculate, peduncle glabrous, with the pedicels very slender. Lobes of the calyx small, ovate, obtuse, margins shortly ciliate, much shorter than from the corolla. Corolla recurved, 5 parted all the way to one third from the basal area, glabrous outside, very minutely papillose inside, lobes broadly rhomboid-ovate, acute. Scales of the corolla compressed above, thickly keeled above, scales visibly obliquely squared, apex shortly acute, anthers somewhat short. Pollinia obovoid-oblong, with the translators short overall, retinaculum oblong. A high climbing clinging vine with slender cord like, loosely leaved branches. Leaves 12-20 cm. *wide. Petiole very short, softly pubescent, about 1 cm. long.

A high climbing clinging vine with slender cord like, loosely leaved branches. Leaves 12-20 cm. *wide. Petiole very short, softly pubescent, about 1 cm. long. Inflorescences umbellate, about 10 flowered, on a 5 cm. long, shortly hirsute peduncle. Pedicels bare, about 5 cm. long. Flowers like those of the previous species. Calyx small about 2 mm. long. Corolla spread out, about 2.1 cm. in diameter. Corona scales, from the tip to the outer edge 3 mm. long, at the front 3.5 mm. high. Northeastern New Guinea: on trees in the forest of the hills of the Wabe river at the foot of the Finisterre Mountains, about 400 m. altitude (Schlechter #18075 - Blooming in July 1908).

Indeed the species is distinguished from H. piestolepis Schlechter through the pubescence, branches subsequently covered with many lenticels and by the long narrow thickened leaves, whose undersides are thickly covered with short hairs. In the corolla, both species are similar but in the corona scales completely different, for in the ones in hand, they are by far not so strongly compressed and are much smaller than those of H. piestolepis Schlechter. The flowers are yellowish-white, outside lightly overlaid with red. Published by Dr. R. Schlechter in: 1913 Botanische Jahrbücher 50:123-124, "Die Asclepiadaceen von Deutsch Neu Guinea".

* The Latin that I received this translation from stated that the leaves of this plant were 12 to 20 cm wide, however I am absolutely certain that what was meant was 12 to 20 cm long as I own this plant and find that the leaves are at least 5 times longer than they are wide

* The same reason here, simply a mistranslation of the original Latin, 12-20 cm long is what was intended.

Hoya hypolasia Schlechter, 1913, Type # 18075 (B)

THE BEAUTIFUL PHILIPPINO'S

We all know the story, because for most if not all of us, the story is the same.

We start out with H. carnosa, maybe only one but very soon the addiction grabs us when least expected and we buy or somehow latch on to another few or half a dozen. It usually doesn't take long to realize that there are more than just H. carnosa's in the world.

I would almost bet that at least 75 out of 100 will choose an H. pubicalyx as their second choice. They are very easy to grow and flower and though they may look similar to H. carnosa on the surface, they are quite different on close inspection and besides that, the colors are reds, purples, and dark and light pink, with fuzzy white halos around each petal. The H. pubicalyx are called all kinds of names but mostly have pink, silver and red somewhere in the name. This species is among the many beautiful species that are found in the Philippine Islands.

On the next several pages you will get a sampling of these wonderful plants that are so very beautiful and easy to grow. This will be just "the tip of the iceberg" There are dozens that have been discovered and more being discovered all the time.

I'm going to start this photo compendium with the species under discussion above.

This gorgeous photo display was sent to me by Marcy Durst of California, where these fairly cold tolerant plants are grown for the most part outside. I do know some members keep them in pots on rolling stands and roll them into a warmer spot during the winter. Of course many hoyas, especially others from the Philippines and many other Pacific Islands would never live through a winter outdoors, even in Southern California, such is the case with H. darwinii below.

Hoya pubicalyx *Merrill*

Hoya darwinii *Loher*

Hoya andalensis Kloppenburg

Hoya benguetensis Schlechter

Hoya blashernaezii Kloppenburg

Hoya bordenii Schlechter

Hoya andalensis *Kloppenburg*

The plant was sent to me by Paul Shirley, the Netherlands in 2002. It bloomed here in Fresno California 19 August 2004.

As near as I can determine this plant (IPPS 1775) was collected by E. de Vogel / J. Vernaden at Padang, Air Sirah, Sumatra in a young secondary forest. Also as Hoya sp. 24758.

This is a small leaved dangling plant. Leaves opposite, small, cupped below, ovate 5.0 x 2.2 cm. mostly uniform, medium flat green color above, below much lighter, most leaf pairs turned to one side of the stem. Many small stubby adventitious roots along the stems, internodes 4.5 - 7 cm. long, mostly 5 cm, ventral surface granulose with some fine hair cells along the midrib, dorsal with some hair cells near the base, otherwise glabrous. Stems green with a fine puberulance. Petioles curved 1 cm. or less long, not grooved above, very small rudimentary glands at attachment to the blade. Peduncles axillary, curved 5 cm. long, first flowerings from stems where leaves have not yet formed, finely puberulent 18 flowers per cluster, not all open at once; clusters flat. Pedicels, pale green, curved 1.5-2.4 cm. long in a geotropic cluster.

Hoya andalensis Kloppenburg species nova. Typus #20051 (UC). Hoya Section Acanthostemma (Blume) Kloppenburg. Ex hort Fresno, California. Species affinis Hoya bilobata Schlechter sed pro parte maxima partitus 2X magni. Coronae lobus interior usa predistinctus, luteus, dorsalis pagina granulosus; subsepartus a coronae corpus; retinaculae translatori brevis, retinacula parvus, ovatus, differt.

The species is similar to Hoya bilobata Schlechter but differs. For the most part the features are twice as large. The inner coronal lobe is distinct, a yellow color with a granulose upper surface and somewhat separated from the main coronal body. The translators are short and the retinaculum is small and ovate.

The name is derived from the ancient name for the Island of Sumatrera (Sumatra). Data supplied by Kim F. Yap, Singapore.

Hoya blashernaezii *Kloppenburg*

Hoya blashernaezii Kloppenburg sp. nov. Typus # 97094 Bishop Herbarium, Honolulu, Hawaii. Type material from cuttings of original plant, subsequently grown and flowered by Ted Green, Green Plant Research, Kaaawa, Hawaii. Exterior lobiis coronae similis Hoya bordenii Schlechter a qua foliis floribiscue minoribus, corolla campanulati rotata differt.

This is a graceful climbing and dangling plant with narrowly lanceolate leaves with small clusters of white flowers that turn yellowish with age. It is similar to other campanulate Hoya species except most of those species have elevated blunt outer coronal lobes whereas in this new species the coronal lobes although raised are very narrow and the outer apex tapers into an acute end. In this latter respect the lobes are similar to those of Hoya palawanica Kloppenburg except there the outer coronal lobes are flat or even tapering downward. The sap is milky white.

Hoya benguetensis *Schlechter*

A twining epiphyte, climbing branched, stalks and branches threadlike elongate, flexible round, glabrous, loosely leafed, with the leaves elliptical or ovate elliptical, acuminate, glabrous, with thick coriaceous texture, with 5 primary nerves very conspicuous, 6-10 cm. long; with the cymes shaped like umbels of many flowers, with the rachis at last cylindrical, elongate, with the peduncle now short, pedicels at times nearly 7.5 cm. long, with the pedicels threadlike slender, glabrous, 1-1.3 cm. long; apparently reddish, midsize in general; with the segments of the calyx ovate obtuse, glabrous, barely 0.2 cm. long;

corolla all the way to below the middle 5 lobed, rotate, outside glabrous, inside minutely and somewhat inconspicuously mealy-papulose, about 1 cm. in diameter, lobes broadly ovate, acute, about 0.3 cm. long; with the corona scales somewhat horizontal, with the tip obtuse , produced into a beak, with the outer tip obtuse, above longitudinally keeled all the way from back of the tip, channeled below, with the pollinia obliquely clavate, with the translators very short, with the retinaculum rhomboid.

A species in leaf characteristics somewhat resembling Hoya camphorifolia Warburg, but well distinguished from that species by its flowers which are apparently reddish.

Hoya bordenii *Schlechter*

In Philippine Journal of Science 1 supp.(1906) 302. R. Schlechter. Hoya bordenii Schlechter sp. nov.

Epiphytica in ramis arborum, ramosa; ramis caulibusque filiformibus elongatis, flexuosis, glabris, laxe foliatis; foliis patulis lanceolato-oblongis vel auguste ellipticus, acuminatis, glabris, textura coriaceis, 11-18 cm. longis, medio vel infra medium 2.5 - 4.5 cm. latis, petiolo carnoso brevi 1.5-2 cm. longo; cymis umbelliformibus pedunculatis, pedunculo 3-5 cm. longo tereti, glabro, pedicellio filiformibus gracillimis glabris, 2.7 cm. longis floribus illis H. parasitica Wall. fere aequimagnis, roseis; calycis segmentis ovatis, obtusiusculis basin versus sparsissime puberulis, circ. 1.5 mm. longis;: corolla rotata circ. 1 cm. diametiente, usque infra medium 5-lobata, extus glabra, intus minute et sparsim granuloso-papillosa, lobis ovatis acutis; coronae foliolis horizontalibus superne anguste ellipticus, apice anteriore et posteriore subacutis, medio gibbo lineari breviore longitudinaliter donato, subtus longitudinaliter foveolata; anther apicem anteriorem folioli excedente, marginibus cartilagineis angustatis falcatis; poliniis oblique oblongoideis, translatoribus brevissimis, retinaculo rhomboideo parvulo.

Luzon, Province of Bataan, -Mount Maravilles (1213 Borden) June, 1904. In forests at 650m.

Evidently one of the species of the Hoya parasitica Wall., group, and closely related to that species. However, it can be readily recognized by its long leaves and rather narrow straight corona scales.

Translation: A branched epiphyte in tree branches, branching stalks threadlike elongate, flexible, glabrous, loosely leaved: with leaves outspread lanceolate-oblong or narrowly elliptical, acuminate, glabrous, texture leathery, 11-18 cm. long, 2.5-4.5 cm. wide at the middle or below the middle, with the petiole short, fleshy 1.5-2 cm. long; with the cymes shaped like umbels, pedunculate, with the peduncle 3-5 cm. long, round glabrous, with the pedicels threadlike, vary narrow glabrous, 2.7 cm. long; flowers similar to those of H. parasitica Wallich, almost equal in size, rosy; segments of the calyx ovate obtuse, toward the base sparsely puberulous, about 1.5 mm. long; corolla rotate about 1 cm. in diameter, 5 lobed all the way to below the middle, outside glabrous, inside minute and sparsely granulose papillose, lobes ovate acute; scales of the corona horizontal, above narrowly elliptic, with the inner and exterior tip somewhat acute, with a hump (swelling) in the middle of a short linear longitudinal ridge, below with a longitudinal minute pit; leaflet of the anther apex a little extended, margins cartilaginous, narrowly sickle shaped; pollinia obliquely oblong, translators very small, retinaculum smaller, rhomboid.

Luzon Province of Bataan, Mount Maravilles (1213 Borden) June, 1904. In forest at 650 meters altitude.

Hoya burtoniae Schlechter

Hoya camphorifolia

Hoya crassicaulis Schlechter

Hoya heusckeliana Kloppenburg

Hoya burtoniae Kloppenburg, sp. nov. section Acanthostemma.

In the Hoyan Vol. 12 #1 Summer 1990. Type: Without # Loher (UC). Collected by Loher in Montalban, Rizal province, Luzon , Philippines September 1909. Acanthostemma Section.

This is the collection location from which the type of Hoya darwinii Loher was collected by Loher and in the same year. A small compact epiphytic vine, covered with a very fine velutinous pubescence, under which are fine punctations. Internodes 3.0-3.5 cm. long, green with enlarged nodes and often with a pair of adventitious short roots, tan and corky at these areas, sparingly branched. Petiole short, rigid 0.5 cm. long x 0.2-0.3 cm. in diameter, terete, puberulous, curved. Foliage deep green above , often with a lighter longitudinal area in the center (midrib area), thick and fleshy, enervis, no midrib visible, margins turned under, perfectly ovate most often 3.0 cm. long x 0.2 cm. at the widest, plants in shade with longer leaves, undersides concave, usually purplish-rose in color, with all these surfaces covered with the fine velutinous pubescence. Peduncles about 0.3 cm long, rigid, with rachis enlarged. Inflorescence axillary or terminal, geotropic. Pedicels terete 1.2-2.2 cm. long, curved (differing in length). Calyx segments individual, ovate, obtuse velutinous, about 0.12 cm. long with no ligules. Corolla about 1.1 cm. in diameter flat, reflexed, outside glabrous, inside puberulous, apical end with a triangular glabrous portion, ovate acute, lobes about 0.5 cm. wide 0.52 cm. in diameter, scales of the corona, above narrowly elliptical, curved, outer apex covered over with two side lobe extensions (bilobed), inner lobe termi¬nating in a thin rigid extension curling away from the stigma upon drying, below channeled part way. Pollinaria with vacuoled and keeled pollinia attached to broadly winged caudicles and translators, retinaculum relatively small, bifid at the outer apex, covered over with a translucent membrane. Follicles narrow¬ly linear, tapering to both ends, 10-15 cm. long.

This plant is not represented by many herbarium collections and does not often show up in field collected material. The plant now in commerce was obtained from Dexter Heuschkel, Manila Memorial Gardens by myself and Ted Green in 1981. The subsequent renova¬tion of the Aviary area destroyed this plant. Till now this plant has been in commerce under the designation of Hoya sp. 81084.

Notations: There was a plant sold and distributed as this species by Burton which has longer more elliptic lanceolate foliage. It is not the same species unless this species exhibits a lot of clonal variation. I was of the opinion originally that H. tsangii Burton (the clone sold as this but not the true species) was a distinct species. I now tend to think it is a green variation of this species i. e. H. burtoniae Kloppenburg. Maybe DNA studies can help us out here.

Hoya crassicaulis Elmer ex Kloppenburg

This species is closest to H. incrassata Warburg and has been confused with and lumped with this species in commerce as well as mislabeled on many herbarium sheets. After studying Elmer's type sheet #14440 at (UC) and (BO), examining 23 clones, most of which I now consider H. crassicaulis Elmer ex Kloppenburg, I now consider this a distinct species and not part of a (cline), a continuous series of variation between two extremes. H. incrassata Warburg is relatively rare in the Philippines in comparison to this new species. There are many existing clones (23 or so) in commerce which exhibit clonal variations in a number of characteristics including umbel flower number, umbel diameter, pedicel length, and foliar characteristics. None approach the smaller diameter flower cluster of Hoya incrassata Warburg, the smaller calyx size (also usually more ciliate), longer peduncle, shorter pedicels, smaller corona among other differences. The pollinaria of the two species are very distinct and I have not found any intermediate types. The retinacular head of H. crassicaulis is long when compared to the short winged head of H.

Descriptions for Pg. 14 continued

incrassata's. The attachment of the translators are just below the short broad (winged) head in this latter species whereas H. crassicaulis has a elongated more rounded narrow head, has translators attached well down (below the waist) of the retinaculum. The remanding portion of the retinaculum in this species is broad hipped, reminding me of a tarantula in shape. The retinaculum is so long and the attachment of the translators and caudicle are so low down that on examining this structure the retinaculum often turns on this axis so as to present itself in an unnatural configuration. The corona scales of H. crassicaulis are longer, cupped above with the outer lobe elevated near the apex, giving a sway backed cross section. H. incrassata's scales are more bulky, shorter, thicker and essentially horizontal. Both species have paired anther wings, more prominent in H. crassicaulis. The two species are undoubtedly evolutionarily linked but they do not represent a cline.

Hoya camphorifolia Warburg

A slender branched vineing plant, having lenticels reduced to a point and elevated, distributed upon the branches, glabrous. Petiole curved or twisted, round, lenticeled or wrinkled, simi¬lar in color to the stems, but exhibiting some purpling on new growth, 1 cm. long, 0.1 cm. in diameter. Leaf blade glabrous on both sides, parchment like, ovate elliptic or elliptic, 6 to 9 cm. long, in the middle 2.5 to 3.5 cm. wide, apex acuminate acute often curled back, often convex on underside, bases narrowly rounded. Veins 2-3 on both surfaces ascending, not all reaching the apex, reticulate, distinct but not prominent. Peduncles long and filamentous, straight, glabrous, 8-9 cm. long, 0.1 cm. diam., rachis enlarged 0.3-0.4 cm. in diam. rough. Pedicels of equal length 1.1 cm. long, filamentous, forming a geotropic convex umbel, glabrous, usually 19-23 in number, very pale green. Sepals 0.1 -0.2 cm. long, lanceolate, tip narrowly rounded to acute, outside glabrous granulate, inside concave glabrous smooth, less than 0.1 cm. wide at base, 1 ligule at each juncture, not over¬lapping. Corolla 0.6 cm. diam., flattened to 0.9 cm., outside glabrous regularly and sparsely punctate, inside, papillose, lobes broadly triangular 0.25 cm. at widest, sinus 3/4 to base. Corona waxy, scales elliptic, boat shaped, concave above, longitudinally lined, bottom lined and channeled, outer apex higher than inner and obtuse, inner apex erect acute, anther appendages exceeding, scales do not reach sinus of corolla. Pollinia very broad and short, vacuole present, keel does not extend to translator which is narrowly winged, retinacula also short, broad at top, channeled end covered by wings. Stigma broadly triangular, tip loosely globular. Flower rose with darker center, remains open for short time. A.D.E. Elmer " dangling masses from limbs and branches of trees in forest of a depression at 1000' altitude, arising from an ant nest. Luzon" (Benguet, Tayabas, Sorsogon), Mindanao.

Hoya heuschkeliana Kloppenburg

Characteristics this species has to offer are free flowering and wonderfully small with an unusual flower. It is a creeper or dangling, glabrous plant. I first saw the Type plant in Professor Juan Pancho's garden at Lebis, Laguna, Philippines, south of Manila by the edge of Laguna lake. It had rooted at the base of a small tree in his side garden and twisted its way upward to the light. At almost every turn of the tree trunk were clusters of rosy bell shaped flowers. It took dissection to make sure it was really a hoya. Sure enough it is a bilobed species with a bell shaped flower. The blossoms reminded me of the Manzaneta flowers from the Sierra Nevada Mountains of California or other heather like flowers. The flowers are unique in that the corolla is not slit to the middle, which will not allow it to physically open completely. With this physical restriction you come up with a rather closed bell-like flower, like sleigh bells. Only the lobes of the corolla fold back to reveal the small crown enclosed within.

H. cummingiana

H. mindorensis

Hoya cagayanensis

Hoya obscura

Descriptions for Pg. 17

Hoya cumingiana Decaisne

A very adaptive species preferring limestone locations, outcroppings, cliffs, boulders, and roadcuts in open places from sea level to 2000 m. It is a scandent shrub with both pendulous and upward twining stems, glabrous leafy branches, green becoming woody, leaves ovate cordate. Variable in leaf size, shape and pubescence. Peduncle and pedicel length are also variable, but it is easily recognizable and distinctive. Leaves in general glabrous above, venous, papillose-velvety below, shortly petiolate. Petiole 0.5 + cm. long. Peduncles 2.8 + cm. long thickening toward the rachis. Pedicels variable in length 1.5-2.5 cm. long, all green, mostly glabrous except in the forms approaching the densifolia types. Few flowers per umbel. Calyx lobes overlapping at base, apex narrowly rounded almost mucronate, glabrous except for very sparse hairs on outer surface, curved downward (reflex), ligule at base of each lobe. Corolla lobes triangular acute and reflexed, outside glabrous, inside papillose. Corona raised in the center, anther appendages exceeding inner lobe which is extended forward. Scales slightly concave above, outer lobe narrowly ovate. Lobes with side protrusions and channeled below. Stigma is capitate and well developed. Pollinia 0.06 cm. long x 0.02 cm. wide, keeled and with adjacent vacuole, outer lobe rounded. Translators short and narrow. Retinacula long, narrow 0.03 cm. x 0.01 cm. with divided outer lobe. Luzon (Benguet, Bontoc, Bataan, Rizal, Camarines), Mindoro, Ticao, Palawan, Mayon Volcano, Albay Prov, Luzon et. al.

In The Garden 18 (1880) 355. "The Hoyas or Honey Plants" Z. B.. Hoya cumingiana It is somewhat distinct from the majority of cultivated hoyas, being stiff and erect rather than climbing, as most of the Hoyas are. Forms a bush - indeed something similar to what is seen in the allied Cyrtoceras reflexum, The flowers, too, are not unlike those of the Cyrtoceras, but the colors are different, as in the Hoya they are yellowish-green, with a brown coronet. It is native of the Philippines, and was introduced by Messers Veitch about thirty years ago. The annealed woodcut shows the flowers of this species.

Hoya cagayanensis Burton 1987

Type description:

In The Hoyan 8/2 (1987) b. Hoya cagayanensis Burton n. s. Suffrutex gracilis. Rami flexuosi, teretes, glabri. Folia elliptical textura tenuiter coriacea, penninervis utrinque glabra, 6-8 cm. x 2.25 - 3 cm., petiolo 1 cm. longo ±. Inflorescentiae umbelliformes, pedunculis 4 - 8 cm. longis, pedicellis 1.25 - 2 cm. longis. Calyx lobis glabris, margine ciliatis. Corolla c. 14 mm. diametra, lobis extus glabris intus puberulis c. 6 mm. x 3.25 mm. Corona squama ovata, apice interne erecta, rostrata, externe subobtusa, superne concavula, subtus sulcata. Casiguran, Tayabas Prov.*, Luzon, Philippines. Type Maximo Ramos Philippine Bureau of Science #7374, March 1909. Others studied: M. Dano, B.S. #29062, 45730. McGregor B.S. 23173. This name was given to this species by R. Schlechter. Specimens were distributed under this name but it was never previously published nor does it appear to match any previously published species.

Compilers Note: The type sheet #7374 is from Cagayan Province, Luzon, Philippines. Sheet #45730 is from Tayabas Province, and collected by Ramos & Edano.

Translation: A slender half shrub. Branches flexible, round, glabrous. Leaves elliptic, lightly leathery, penninerved, both sides glabrous, 6 - 8 cm. by 2.25 - 3 cm., petiole 1 com (cm.) plus or minus long. Inflorescence umbel-like, peduncles 4 - 8 cm. long, pedicels 1.25 - 2 cm. long. Calyx lobes glabrous, with the margines ciliate. Corolla about 14 mm. in diameter, lobes outside glabrous, inside puberulous about 6 mm. by 3.25 mm. Corona scales ovate, internal tips erect, rotate, outside somewhat obtuse, above concave, below channeled.

Descriptions for Pg. 17 continued

In Dr. Schlechter's Hoya Species (1993) 42-43. R. D. Kloppenburg. Hoya cagayanensis Burton.

H. cagayanensis Schlechter (unpublished).

A narrow climber. Branches flexible, round, glabrous. With elliptic leaves, texture lightly leathery, penninerved with both sides glabrous 6-8 cm. x 2.5-3 cm., petiole 1 cm. (? cm.) long ±. With the inflorescence shaped like an umbel, with the peduncles 4-8 cm. long, with the pedicels 1.25-2 cm. long, with the lobes of the calyx glabrous, margins ciliate. Corolla about 14 mm. in diameter, with lobes outside glabrous, inside puberulous, about 6 mm. x 3.25 mm.. Corona scale ovate, internal apex erect, beaked, external somewhat obtuse, above concave, below sulcate.

A branching vine, slender, terete, glabrous. Leaves elliptic, thinly coriaceous, glabrous, and penninerved and much reticulat¬ed, 7 or so on each side of fine midrib, 6.5-8.5 cm. long, and 2.5-3 cm. about the middle, narrowly ovate-lanceolate with acute apex. Petiole curved, 1 cm. long, glabrous. Peduncle long and straight, 4 cm. x 0.15 cm., glabrous, enlarged toward the rachis which on the type sheet is 1.2 cm. x 0.4 cm. and scaly rough. Pedicels filiform, uniform length, 1.7 to 3 cm. long (variation among umbels but not within), glabrous. Calyx lobes glabrous with ciliate edges, united at the base, broadly linear, rounded apex. Corolla about 1.4 cm. in diameter, outside glabrous, inside puberulous, obovate with mucronate apex, 0.6 cm. long and 0.33 cm. wide above the middle, lobed to below the middle, reflexed. Corona 0.6 cm. in diameter. Outer lobe raised slightly above inner lobe, obtuse, top of scale concave with umbo in center toward inner lobe; inner lobe narrowly and shortly beaked, erect; lobes channeled below (sulcate). Anther appendages exceeding inner lobe.

It seems the H. cagayanensis that has been circulating for the past 10 years or so is not the correct species. I have been fortunate enough to acquire cuttings of the correct species from Monina Siar of the University of The Philippines where these species are being collected and studied. These cuttings have rooted and are growing happily in my greenhouse in Oregon, USA. This species is pictured on the following photo page. Now we hope to find out what the other one is!

Hoya mindorensis Schlechter

Mindoro is a fairly large island in the Philippines, south-west of the Manila harbor, not far off the West coast of Luzon. Dr. Schlechter named this species for this island (the ending of the name "ensis" means it comes from Mindoro). It was discovered by R. C. MacGregor on a collecting\study trip up the Baco River which winds its way down the South slopes of Mt. Halcon and empties into the sea on the northeast coast of Mindoro. It is a wonderfully forested area with many fine hoya species. MacGregor found it in April-May of 1905.

The foliage of Hoya mindorensis species is very similar to that of Hoya verticillata G. Don, and can be easily mistaken for this much more common species when not in bloom. When in bloom, there is confusion in these two species. The flowers are very different. In Hoya mindorensis, the coronal scales are sharply keeled on top, from one apex to the other. Both ends are acute. The corolla is so broad that it rolls under at the sinus area, giving rise to ear or tongue-like lobes. If you have a microscope you will also observe a very distinctive pollinarium. The pollinia are broad and short and the holder of the paired pollinium, the retinaculum, is very short, actually proportionally minute.

It appears there are either two species involved here or a variable one. The flowers are variable in color in the different clones, however, they are usually a fuzzy white with a red sharp ender central crown. Actually, this is a very striking globose umbel of flowers. The corolla is

really glabrous except for the inner half that is studded with stiff crystalline hairs that give the corona an unusual background. At maturity, the corolla turns under, revolute, exposing the stiff hairs, which gives the flower a fuzzy appearance. Hoya mindorensis is not a strong grower to begin with but eventually makes a good full plant. As with many Philippine hoya species it might benefit from the addition of limestone (calcium in the form of oyster shell is usually available). Keep the potting mix loose for good drainage and water copiously when you do water. Because this leaches out a lot of nutrients, do fertilize regularly. This species needs a lot of light to bring it into bloom. The large globe shaped flower umbel is one of the best. Very unusual! Do not pass this one up.

Hoya obscura Elmer ex Burton

Another species that comes to us from the Philippines. I receive more cuttings of this species than any other sent by native collectors. I do not know if this indi¬cates that it is very plentiful or so attractive that it always catches their eye. It does appear to be widely distributed, however. Hoya obscura is easily recognized by its glossy, wax-like, green and distinctively shaped and veined leaves. Although they may vary in size, they retain a definite recognizable shape. Many of the cuttings I receive have small, very thick leaves. When they establish themselves and begin to grow, the leaves enlarge and are much thinner; they also become a lighter green. The depth of green seems to me to indicate I am giving them less light here than in their native habitat.

Hoya obscura is another species whose leaves like those of Hoya nicholsoniae will turn deep bronze-red when given more light or high phosphate fertilizers. This is only true of some clones and is true of the first clone sent to the United States by the late Peter Tsang. There are more recent introductions that do not do this; in fact their flowers are a little paler in color. In the Philippines this is a plant that has found its way into the nurseries and into their landscaping. One way it is displayed and grown is by rooting it on coconuts, husk and all. It is pinned in circular fashion around the husk, which in turn is hung from a wire hooked into the coconut. This is like a hanging basket but so effective and natural from readily available native materials. Hoya merrillii and Hoya quinquenervia are other species are used this way in Philippine garden landscapes.

This plant is an epiphyte, very bushy and with compact bushy growth. It makes and excellent house plant and a good light garden specimen. It seems to be almost immune to pests, but watch for snails outdoors and for mealy bugs. Like most Philippine species it loves a lot of water and humidity. It will be happy to be washed off occasionally also. Do not let this plant dry out to where it becomes completely dry. Even though it is very fleshy and succulent, it will wither from too little water. The flower clusters are flat and made up of dainty fuzzy cream to pink balls of fluff, that smell lovely. The fragrance is mild and certainly not over powering. Just nice ! This plant is a must for collections. Like Hoya lacunosa this is another species in the Otostemma section.

What a beauty!

Some of our hoya species have plain green foliage that, even though not unpleasant to look at, could never be called spectacular. Several of these un-spectacular species can and often do have flowers that will literally "knock your socks off". Some of the most awesome and breath-taking foliage in the plant kingdom can be found in the hoya genus and as often as not will have very small rather insignificant flowers. Many are rather inadequite in both flower and foliage but all are interesting. A small number may have both flowers and foliage that are outstanding and often, a wonderful fragrance to boot. With its very beautiful and prominent corona as its main attraction, this species happens to be one of the few.

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I had just finished pulling the text and drawings from a book that Dale Kloppenburg and I had done together back in 1991, and the flower drawings jumped out and smacked me in the face. The drawings were identical to the flower photo staring at me from my desk. When I looked up the type sheet,....yep, the foliage was identical also.

I have tried for years to grow this plant with very little success. However a year ago I finally got two plants that were fairly well established and though they haven't amazed me with any spectacular growth, at least they are still alive and look great. Since my first sighting of this plant, I have seen quite a few photos from other members plants. What a thrill to know that somebody can grow this plant and get it to bloom.

Check out the gorgeous full plant shot on our back cover. The flowers on the front of Fraterna this issue, the full plant photo on the back cover and the framed photo this page, were all grown and photographed by Ubol Paradee of Thailand.

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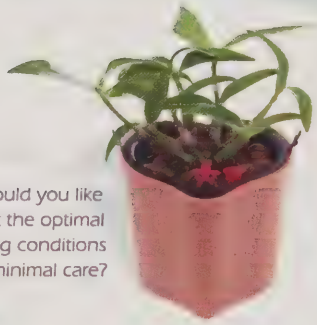

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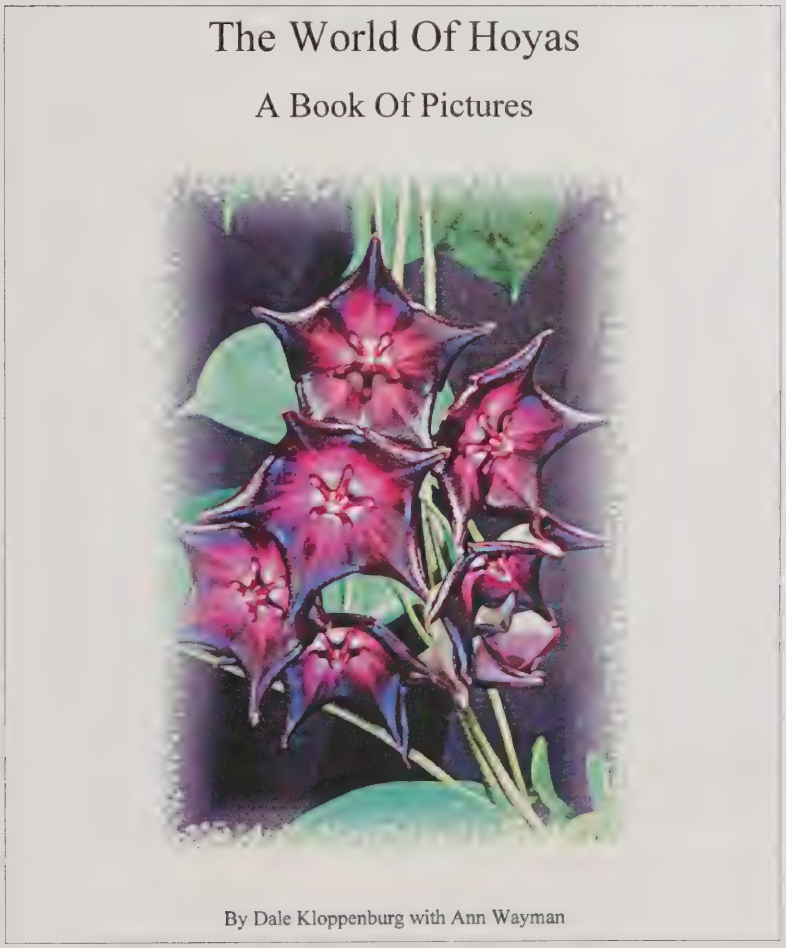

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Hoya hypolasia *Schlechter*

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Hoya flagellata *Kerr*

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Back Cover---Hoya flagellata *Kerr* drawing by Dr. Richard Rintz

Our Cover Story

Hoya flagellata *Kerr*

I'm sure I've said it before and I'll probably say it again, so here goes! these tiny little jewels thrill me no end when they bloom, and they seem to bloom consistently at very young ages. At least many of them do. There are exceptions and the exceptions are an even bigger thrill.

H. flagellata is a very small plant with small, caudata like leaves. Not thick like caudata but with the same crinkled, hard leathery texture.

I got this plant as a cutting 2 ½ years ago from David Liddle. It rooted almost immediatley and 18 months later I saw the first blooms. The tiny umbels hang on thread thin stems that don't look strong enough to hold them. They normally have 3 to 4 umbels with anywhere from 8 to 10 flowers per umbel.

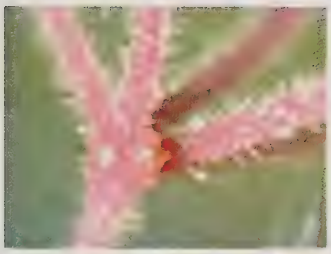
The small flowers are unbelievably beautiful, with sparkling sugar white petals and a bright red center. The long stamens that emerge from the center of the flowers are feathery and are so white that they seem to glitter.

I have not been able to detect any fragrance from these flowers as is fairly normal for some of the very small species like H. bilobata, H. parvifolia, H. curtisii, and so many others. However that hasn't dampened my love for these precious additions to our Hoya collections.

This has been another faborite Hoya of mine ever since I saw the first bloom and it has bloomed almost continually since that first flower opened. In fact it has been so busy putting on blooms that it hasn't grown but very few leaves. I'm hoping that it will take a long rest and start growing some foliage but if it doesn't, I can probably be happy with the 6 leaves that it has. The only problem that I see is that I won't be able to take cuttings for new plants.

Ann Wayman

Hoya flagellata Kerr 1940
via Ann Wayman in solution August 2008
1 peduncle w/umbel of 8 flowers.



Peduncle with rachis, first blooming and pedicels enlarged about 8X. Rachis is bracteate, all are hirsute. Peduncle is long, thin 4.5 cm. long x 0.04 cm. in diameter. Pedicels 0.7 cm. to 1.5 cm. long, terete, hirsute.

Outside view of the flower, pedicel, calyx and corolla enlarged ca. 8X. Corolla outside is glabrous, granulate, sepals are long and narrow reaching thr corolla sinuses, The corolla outer apical lobes are extremely long and here folded back to the calyx area.

Outside view of the calyx enlarged about 8X. Pedicel is hirsute, sepals outside are granulose with an occasional hirsute cell. 0.25 cm. long and base o.06 cm. wide, very slight basal overlap, apex narrowly acute.

Inside view of the calyx enlarged about 16X. sepals are linear acute, dark ligules are present, Surface is slick, glabrous.

Outside surface of the corolla center enlarged about 8X. The surface is glabrous, granulate. The center is thickened in a unusual rounded raised lobed fashion. I have never observed this in any other Hoya species.

Inside view of corolla center enlarged as above. This surface has some long hirsute cells near the corolla sinuses otherwise glabrous and granulate. The center thickening below jeer leaves indentations in the center of the lobes.

Sinus – sinus	0.37 cm.
Sinus – center	0.30 cm.
Sinus – apex	0.75 cm.
Apex – center	1.10 cm.
Widest	0.39cm. just above sinuses.

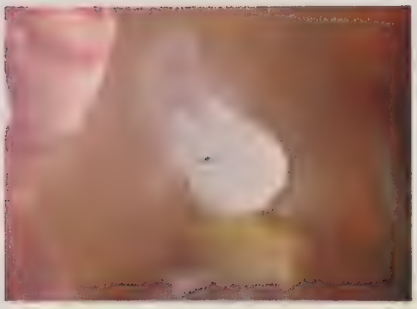
Apical end of corolla is long and narrow.

Bottom view of the corona enlarged about 8X. Lobes are channeled to near the central long thickened column; and sides are sulcate. Apex is acute. Column is 0.10 cm. long 0.02 cm. in diameter.

A group of flowers top view showing flowers opening with the long corolla lobes recurved and the very long flagellate anthers extending from the flower center.

Side view of a corona with the long central anthers.

Apex – apex	0.27 cm.
Widest	0.12 cm.
Ret. – ret	0.07 cm.
Ret. – center	0.07 cm
Aw. – aw.	0.12 cm.
Aw. – center	0.16 cm.



Staminal center column has a sub-capitate head, crystalline-granulate texture, not divided as in Type description.

Side view of an individual coronal scale enlarged about 16X, Inner lobe is thick dentate, outer lobe is acute but rounded. Anther is extremely long and narrow with an acute apex. Anther wings are narrowly cupped.

A greatly enlarged photomicrograph of the surface of the anther extension showing the textured surface.

The apex of a coronal lobe showing the channeled beginning at the apex and the linear sulcate surface, normally in Hoyas the sulcations are diagonal curving over the sides to the channel.

Pollinium enlarged about 82X

Pollinium length 0.33 mm. widest 0.12 mm.

Retinaculum ...length 0.09 mm. shoulder 0.04 mm. waist 0.02 mm. hip 0.03 mm. ext. 0.02mm.

Translator length 0.11 mm. widest 0.05 mm. depth ca. 0.01mm.

Caudicle bulb is bell shaped 0.06mm. at top.

Hoya tamaleaaea Kloppenburg sp. nova W 2705

Hoya xxxxx Kloppenburg & Siar sp. nova, Typus W 2705 (HAW) hic designatus similis Hoya filiformis Rechinger, Repertorium Specierum Novarum 5(1908)132 sed corolla intus villosus vel penitus pubescentia non glabritia; pedunculus 2.7 cm. longus non 0.07 – 0.08 cm.; pedicellus 2-2.5 cm. longus vs. 0.7-0.8 cm.. differ

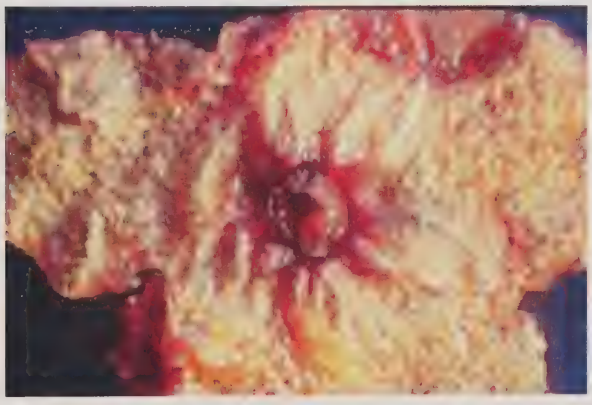
This new species is similar to Hoya filiformis but different, the corolla inside is villous or completely pubescent not glabrous and the peduncles are 2.7 cm. long versus 0.7 - 0.8 cm. and the pedicels are 2-2.5 cm. long not 0.7-0.8 cm. long.

I name this species in honor of Vaiuki Tamaleaa, a Samoan friend, and husband of Fetu Tamaleaa (see Hoya fetuana), who was in the US Marine Corps for 22 years; serving in WWII, Korea & Vietnam conflicts. Many Samoans have given time to the US military, most serving their country as Marines as did Vaiuki.

Notations from the (Dr. Art Whistler's) type sheet.

W 2705 Hoya filiformis Rechinger. Vine with milky juice, climbing on trees on the trail from Fagasa Pass & Matafas; flowers white, lacking any red; elevation 350 m. 2 stems (1 with 3 pairs of leaves + peduncle with 8 pedicels 4 flowers) (1 with 3 pairs of leaves +1 and 2 burst seed pods. Leaves broadly ovate-elliptic, shortly attenuate a little rounded, base obtuse, venation pinnate 5 pairs anastomosing-reticulate, 4.5 - 5.5 cm. long 2.5 - 3 cm at widest near the middle, glabrous, midrib inconspicuous. Petiole ca. 1 cm. long, definitely grooved above, glabrous. Internodes 3.5 - 8.5 cm. long, terete, glabrous, 0.2 cm. in diameter, nodes just slightly enlarged. Peduncle 2.7 cm. long, terete, glabrous, rachis bracteated, fascicled. Pedicels filiform, glabrous, 2 - 2.5 cm. long. Calyx very small triangular. Corolla granulose, glabrous outside, inside finely pubescent, campanulate. Pods 1.5 cm. long, narrow-linear, base with calyx attached, peduncle has enlarged a little, 2.7 cm. long, seeds obovate, comose ca. 1.8 cm. long, seeds and 3 flowers in the envelope.

Note: Not H. filiformis, Flower not glabrous inside. Not H. chlorantha, flower campanulate not flat, and peduncle persistent. Not H. attenuata leaves different. Not H. whistlerii, villous inside. Flower too small for H. betchei



No pedicel was available. Corolla outside view enlarged about 8X. Surface is granulose but glabrous. Central collar is darker and thickened, 0.08 cm. x 0.10 cm. opening, this protrudes below and inwardly also. Coronal lobes show impressions from underneath. lobes are cut more than half way.

Another view of the corolla outside showing the lobe apex enlarged about 8X.

Sinus - sinus	0.24 cm.
Sinus - center	0.40 cm.
Sinus - apex	0.55 cm.
Widest	0.50 cm.
Apex - center	0.80 cm.

So flower diameter flattened is 1.60 cm.

Inside view of the flower enlarged about 8X. Coronal lobes just reach the corolla sinuses.

Coronal scales with long raised inner dentate lobe that reach the center; dorsal concave with long central raised ridge, edges sharp, outer lobe obtuse, surface longitudinally sulcate. Corolla villous or deeply pubescent. Glabrous under the corona.

Bottom view of the coronal scales enlarged about 8X. Channeled with edges overlapping, longitudinally sulcate.

Apex - apex	0.35 cm.
Apex - center	0.35 cm.
Widest	0.16 cm.

Side view of the coronal scale enlarged about 16X. Long dentate inner lobe is raised over the anther. Anther wings are narrowly scythe shaped; there is a shelf from there to the outer apex making the apex emarginate.

Pollinarium enlarged about 165X. The pollinium has germinated within the flower and the pollen tubes can be seen emerging along the pellucid edge of the pollinia. The retinaculum here is skewed so only a side view can be seen and the translators and caudicle are difficult to measure.

Pollinium:

length	0.47 mm.
widest	0.21 mm.

Retinaculum:

length	0.15 mm.
shoulders	0.11 mm.
hips	0.10 mm.
waist	0.11 mm.
extensions	0.04 mm.

Another pollinarium with a better view of the retinaculum and the translators. Caudicle still hidden but linear (collapsed) on the right hand translator. Here the focus does not show the long head of the retinaculum, one of the intricacies of getting precise measurements and depictions of the shape of 3 dimensional complex structural objects.

Translator:

length		0.11 mm.
widest	depth	0.05 mm.

Structure is fiddle shaped in flat dimension. Pollen tubes in mass on left central side of pollinium.

PLANTS OF SAMOA
Asclepiadaceae
Hoya filiformis Rech.
Vine with milky juice, climbing in trees on the trail from Pagasa Pass and Matafao; flowers white, lacking any red; elevation 350 m.
Coll. Art Whistler
No. W 2705
Date 27 June 1975

Reduced Copy of Type Sheet

Photo by Art Whistler

Hoya nuuuliensis Kloppenburg & Siar sp. nova

Hoya nuuuliensis Kloppenburg & Siar sp. nova. typus W 8505 (HAW) hic designatus similis Hoya samoensis B. Seemann, Flora Vitiensis (1866)163 sed folia anguste elliptici non ovati elliptici: brevior triplinervis indistincti non 5 tuplinerviis, elev. 1 m vs. 300-700 m, differt.

This new species is similar to Hoya samoensis but different, the leaves are narrowly elliptic not ovate elliptic and they are shorter, triplinerved nerves are indistinct not 5 tuplinerved. Elevation 1 m. versus 300-500 m.

From the Type sheet:

8505 as Hoya pottsii Trail, Tutuila, Samoa. 16 April 1992. Vine with cream colored flowers, occasional on a raised area surrounded by mangrove at Nu'uuli behind South Pacific Traders,. Elevation 1 m.. 1 bare stem, 1 with 1 pair of leaves, 1 long stem with detached cluster of 13 flowers. Envelope of 5 flowers. Leaves , glabrous, thick wrinkled, elliptic, trinerved indistinct 6.8 cm. long , ca. 2 cm. wide, apex acute, base cuneate. Petiole glabrous, thick 1 cm. long (cannot see a groove above). Internodes 9 - 10 cm. long (thin to thick) enlarged nodes, glabrous, 0.2 cm. in diameter, rooting. Peduncle glabrous, may be broken off. here 1.7 cm. long, terete, 12 pedicels, rachis with bracts. Pedicels glabrous, filiform, 1.3 cm. long, terete. Calyx small 1/2 way to the corolla sinuses. Corolla reflexed, cut more than half way, broad above the sinuses, glabrous outside, inside ?. Corona glabrous, lobes exceed the corolla sinuses, outer apex acute raised (not recurved at apex) inner apex raised a little.

cuneate. Nearest H. samoensis.

Note: Not H. pottsii, leaf venation triplinerved not palmate; leaf bases not cordate but cuneate. Nearest H. samoensis.

Below is reduced copy of the Type sheet and then data and measurements of the flower parts.

PLANTS OF POLYNESIA
TUTUILA
Asclepiadaceae
Hoya gottaii Traill
Vine with cream colored flowers, occasional on a raised area surrounded by mangrove, at Nu'uuli behind South Pacific Traders. Elevation 1 m.
Coll. Art Whistler
No. 8505
Date 16 April 1992

Calyx on outside of the flower corolla enlarged about 8X. The Pedicel is terete, glabrous, 1.5 cm. long, filiform. The sepals are large and nearly reach the corolla sinuses. Corolla outer surface is granulose, glabrous, lobes are deeply cut with acute apexes and wide lobes just above the sinuses.

Pedicel and inside surface of the pedicel enlarged about 8X. Sepals relatively large, membranous, ligules present of same color as the sepals, difficult to detect. Apexes acute.

Center to apex	0.20 cm.
Apex - apex	0.18 cm.
Widest	0.10 cm. wide at the base.

Corolla outside surface enlarged about 8X. This surface is glabrous pustulate, reflexed, deeply cut with a central collar, a little thickened and raised below.

Sinus - sinus	0.30 cm.
Sinus - center	0.25 cm.
Sinus - apex	0.40 cm.

Apex - center 0.58 cm. so the flower flattened is 1.16 cm. in diameter.

Widest	0.34 cm.

Inside view of the flower enlarged about 8X. The coronal lobes exceed the corolla sinuses but do not touch in the center. Corolla inside surface is pubescent. Apexes acute, wide above the sinuses.

Top view of the corona enlarged about 8X. Surfaces are glabrous. Outer apex acute, inner apex short and most likely dentate, dorsal slightly concave, outer edges sharp.

Apex - apex	0.36 cm.
Apex - center	0.40 cm.
Widest	0.15 cm. out from the middle.
Anther wing - aw.	0.17 cm.
Retinaculum - ret.	0.11 cm.
Aw. - center	0.14 cm.
Ret. - center	0.06 cm.

Anther wings have thick sides and are projected.

Bottom view of the corona enlarged about 8X. The lobes are channeled only to the sinuses, Note the anther wing thickness and slight projection. Outer apex very acute. Column in center slightly thickened ca. 0.05 cm. tall.

Coronal lobe side view enlarged about 16X. The inner lobe is very short. Anther wing is very deeply scythe shaped and the scale is relatively deep.

Pollinarium enlarged about 150X

Pollinia

length	0.40 mm.
widest	0.22 mm.

Retinaculum

length	0.13 mm.
shoulder	0.11 mm.
waist	0.09 mm.
hip	0.10 mm.
ext.	0.05 mm.

Translator

length	0.10 mm.
depth	0.05 mm.

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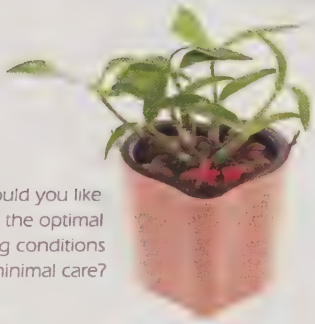

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Hoya faoensis Kloppenburg & Siar

Hoya faoensis Kloppenburg & Siar sp. nova Typus 5714 HAW hic designatus, specie Subsection Angusticarinata Kloppenburg, similis Hoya chlorantha Rechinger nullo modo Hoya betchei (Schlechter) Whistler, differt. Corolla campanulata non plana; flos parte totus parvior cum pollinia 1/3 curtior.

This new hoya species is similar to but different from Hoya chlorantha no way like Hoya betchei. Corolla is campanulate not radially flat, all flower parts are smaller and the pollinia are 1/3 shorter.

Photo micro-graphs of the flowers from the above herbarium sheet 5714:

View of the corolla outside with pedicel attached enlarged about 8X. The pedicel is short (broken off ?), terete, glabrous, shriveled longitudinally, 1 cm. long and 0.06 cm. in diameter Corolla outside is granulose and glabrous, deeply cut. Calyx is very small and sepal apexes do not come near the corolla sinuses.

Pedicel and calyx enlarged about 16X. The ovaries stayed with the corolla when this structure was removed. Calyx is ciliate, otherwise glabrous. sepals 0.24 cm long from center - apex; 0.15 cm from base - apex and 0.11 cm. at the widest just out from base. Apexes are narrowly rounded to subacute. Outside surface is finely granulose.

Outside surface of the corolla enlarged about 8X. Lobes at sinus area broad to form small conduplicate ears exhibited here as a amber spot at each sinus. Flower flattened is 1.58 cm. in diameter.

Sinus - sinus	0.42 cm.
Sinus - center	0.37 cm.
Sinus - Apex	0.50 cm.
Apex - center	0.79 cm.
Widest	0.45 cm.

Inside view of the flower enlarged about 8X. Corolla surface is puberulous. Coronal lobes almost reach the corolla sinuses. Inner lobes are tapered and long, very stiff, touch in the center and cover the anthers. Outer apexes are narrowly rounded, tapering from the middle to the apex. Center raised a little, scales nearly horizontal otherwise. Dorsal edges are sharp, slightly concave, longitudinally sulcate.

Bottom view of the corona enlarged about 8X. All surfaces glabrous. Lobes are channeled.

Apex - apex and Center	0.32 cm.
Widest	0.15 cm.
Anther wing - aw.	0.14 cm.
Anther wing - center	0.13 cm.
Retinaculum - ret.	0.07 cm.
Ret. - center	0.05 cm.

Side view of a coronal scale enlarged about 16X. Inner lobe is narrowly rounded and raised, scale is not overly thick in depth. Outer apex slightly sloping downward but dorsal surface is essentially horizontal. Anther wings are not deeply curved nor much thickened.

Corona enlarged about 16X showing the small domed stylar crown after 2 scales have been removed. On the inner apex of the upper right side of the lobe the curved (yellow) anther wing is plainly visible. The dorsal surfaces of the scale upon drying a little, seem to have two longitudinal ridges one down each side of the scale. Outer lobe apexes appear to be emarginate.

Retinaculum enlarged about 165X. Translator arm is attached to the right side and appear to enter the retinaculum well down on the side near the well rounded hip area, Extensions are very short.

Pollinarium enlarged about 165X. Pollinia are a little shriveled. The shoulder wings extend back from a rounded head, also the same for the waist area. Caudicles are difficult to discern.

Pollinium

length	0.41 mm.
widest	0.20 mm.

Retinaculum

length	0.11 mm.
shoulders	0.14 mm.
waist	0.06 mm.
hip	0.12 mm.
extensions	0.03 mm

Translators

length	0.10 mm.
depth	0.02 mm.

Description of the above herbarium sheet:

5714 18 May 1981 Upolu, Samoa. Originally as H. filiformis Reich. then in 1990 determined as H. betchei (Schltr.) Whistler. Vine with white flowers tinged with pink, occasional climbing in trees in the forest on the north side of Mt. Fao. Elevation ca. 500 m. 1 stem 18 leaves. 1 nice flower cluster, no envelope. 14 flowers, 1 seed pod. Leaves ovate-elliptic shortly apiculate many have folded in half, nerves obscure but pinnate, anastomosing, 4 - 5 cm. long x 2.2 cm. at the widest in the middle. Petiole 0.5 -0.7 cm. long, filiform, same color as stem. Internodes 2.7 - 5 cm. long, terete, glabrous, fine, nodes very little enlarged. Peduncle 2.9 cm. long, filiform, terete, glabrous, same color as stem. Pedicels terete, filiform occasional hair cells 1.7 cm. long. Calyx a little larger, ovate. Corolla campanulate about 1/2 way, glabrous outside; puberulous inside, dark colored. Corona scales long, widest in the middle, acute on both ends, reaching the corolla sinuses. Pod 11 cm. long, narrow, darker color from and enlarged pedicel and calyx, rachis and peduncle.

This is neither species as labeled but is a new species. Note especially the corona here. This could not possibly be H. filiformis as it is not glabrous and the flowers are twice as large. There are too many flowers to be H. betchei, also the peduncles and pedicels are too short and the coronal lobes are the wrong shape also, the outer lobe is emarginate and not obtuse.

Reduced copy of type sheet below:

Hoya hetchei (Schltr.) Schltr.
Art Whistler
Date. Dec. 1990
PLANTS OF SAMOA
Asclepiadaceae
Hoya pilligeria Koch.
vine with white flowers ringed with pink, occasional climbing in small trees in the forest on the north slope of Mt. Vaea. Elev. ca. 500 m.
Coll. Art Whistler
No. 5714
Date 15 Oct. 1985

Hoya Lazaroi Kloppenburg &Siar 2007

Hoya lazaroi Kloppenburg & Siar sp. nova, Typus 70361 CAHUP hic designatus. Species propria, lobis proximalis habens prominens carnatus dorsalis et anthera in affixis basibus lobus proximalibus, Hoya species ex dissimilibus.

This is a distinct species with the inner lobes having a prominent keel on the dorsal surface and the anthers are attached at the base of the inner lobe, it is dissimilar to other Hoya species.

Back of calyx enlarged about 8X. Pedicel is strict, terete, 2.0 cm. long and 0.10 cm in diameter, glabrous.

Sepals are glabrous0.37 cm. long and 0.20 cm. at the widest, ovate with obtuse apex, ¼ overlap.

Calyx inside view, sepals are glabrous slick inside, relatively thin, ligules are present. Ovaries are small, domed, glabrous 0.15 cm. tall and 0.12 cm. wide at pair base.

Calyx on outside of corolla enlarged as above. Sepals reach the corolla sinuses. Corolla outside is glabrous, pedicel tapering larger at the calyx base. Corolla rotate.

Corolla outside surface at the sinus enlarged about 8X.

Sinus – sinus	0.52 cm.
Sinus – center	0.45 cm.
Sinus – apex	0.67 cm.
Apex – center	0.90 cm.
Widest	0.55 cm.

Inside surface of corolla apex, here reflexed enlarged as above, apex is acute; inner surface is finely and evenly pubescent.

Bottom view of a corona enlarged about 16X, the lobes are channeled with fine diagonal sulcations, there is a prominent collar, anther wings are narrow and slightly protrude. Lobe apices are rounded and emarginate

Top view of a coronal scale enlarged as above. The lobes have rather prominent side shelves that reach the outer apex (subsection Angusticarinata Klopp.). Inner lobes are long spatulate rising but not overtopping the prominent anthers in the center. The inner lobe has a raised narrow keel that extends to the center of the outer lobe rising in height to this point where it abruptly lowers to the outer lobe surface but the keel extends toward outer apex. A very unusual and unique keeled lobe. The surface is sulcate with ridges consisting of fine chains.

End view of corona on the corolla. Here the narrow side shelves are visible from below extending along the corona lobe edges to the apex.

Apex – apex	0.52 cm.
Apex – center	0.45 cm.
Widest	0.21 cm.

Top view of the corona enlarged about 64X. The corona here is dried so not as full and plump as normal. Note the long central thin anthers, the long narrow spatulate inner lobes and more difficult to see is the

unusual central keel. It is raised inward from here and now ends abruptly. Note the side lobes of the outer portion of the coronal scale

Side view of a shrunken scale, Note the long overtopping anthers, they are not attached to the inner side of the inner lobe as is usual in Hoya but only attached well down in the inner side of the lobe. Anther wings are deeply scythe shaped. One other unusual feature is the lower narrow side lobes that proceed toward the outer apex

Pollinarium enlarged about 100X

And to the right a little less.

Pollinium

length	0.92 mm.
widest	0.37 mm.

Translators

length	0.23 mm.
depth	0.04 mm.

Retinaculum

length	0.45 mm.
shoulders	0.38 mm.
waist	0.20 mm.
tapers to end.	
extensions	0.15 mm.

Caudicle

bulb diameter	0.13 mm.

Foliage: Glabrous, narrowly elliptic, apex acute, base cuneate to sub-rounded, enervis length 11.0 cm. and 2.8 cm. wide. The internodes are 4.8 cm. long and 0.12 cm. in diameter.

Hoya lazaroi *Kloppenburg & Siar* foliage and buds

Hoya lazaroi, Pictures via Dr. Monina Siar via e-mail

ONE OF A KIND

Nothing like this has ever been attempted before! Dale Kloppenburg's wonderful text in "The World Of Hoyas" has been kept intact, while all the old black and white photocopies of herbarium sheets have been replaced by full page, full color photos of beautifully staged foliage shots with large photo insets of flower umbels that represent the particular species.

Some of the very best photographers in our organization have participated in the publishing of this book with many beautiful photographs, all labeled and correctly identified to the best of our knowledge.

If you have ever wondered what an entire plant, or even the leaves and growth pattern looks like when you see an especially beautiful umbel of hoya flowers, now is your chance. This beautiful book has been professionally bound in perfect binding with a semi-soft vinyl cover. contains 260 pages with several blank pages at the back for notes. Available now. Just $48.00 for the book plus $2.85 book rate postage in the U.S. Postage for priority mail anywhere else in the world is at present $11.00 U.S.

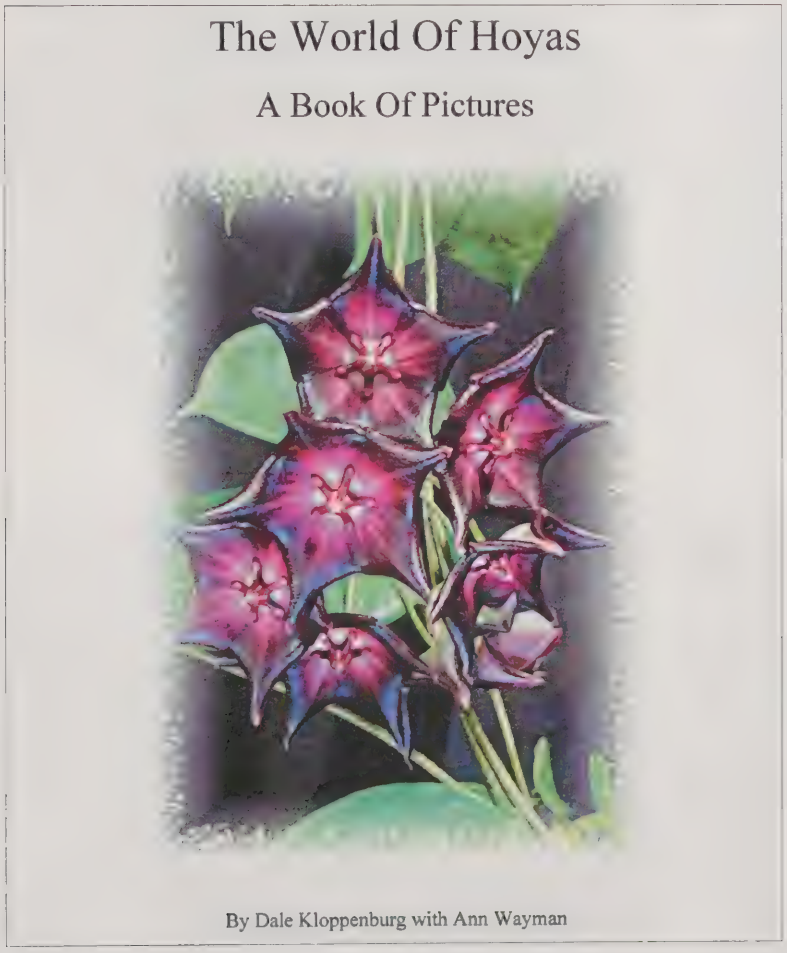

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PHOTO GALLERY DESCRIPTIONS

Top Left

H. buotii *Kloppenburg*...Philippines. This is a hoya that is rather hard to get started but once it is established, it can be a fast and sturdy grower. The flowers are exquisitely beautiful, pale greenish yellow in color with pure white very fuzzy petals and long white hairs on the tips, dark cranberry red center. This is not a hoya for the beginner but will probably do alright if you can find one that is well rooted....Photo by Eva-Karin Wiberg.

Top Right

H. wibergii *Kloppenburg*...This plant was collected by our own member and photographer, Eva-Karin Wiberg on a collecting trip to the Philippines. The foliage on this plant is stunning. Emerald green with irregular white and gray splashes. A good strong grower with 30 to 40 greenish flower petals, pure white coronas with a ruby red center. The fragrance of these flowers is rather heavy and quite sweet, much like honeysuckle.... Photo by Ann Wayman.

Center Left

H. davidcummingii *Kloppenburg*...Another exceptional Philippine hoya. This hoya is without a doubt, one of the best. It is easy to grow, easy to bring into flower, seldom has bugs of any kind, is compact and makes a beautiful basket plant. The flower color is a gorgeous rose/red with honey yellow corona and a red center. The foliage is small to medium, lance shaped and a nice clean forest green color. I really like this plant....Photo by Ann Wayman

Center Right

H. vaccinoides *Hooker*...This is a plant that I purchased as H. Wee Bella but was later informed that it was H. vaccinoides. Since I haven't been able to find a valid publishing of H. wee bella I will continue to consider it as H. vaccinoides until proven different. This is a very small plant with rather large flowers and blooms almost constantly with umbels of flowers that are, at least in their outward appearence, identical to Hoya bella...Photo by Ann Wayman.

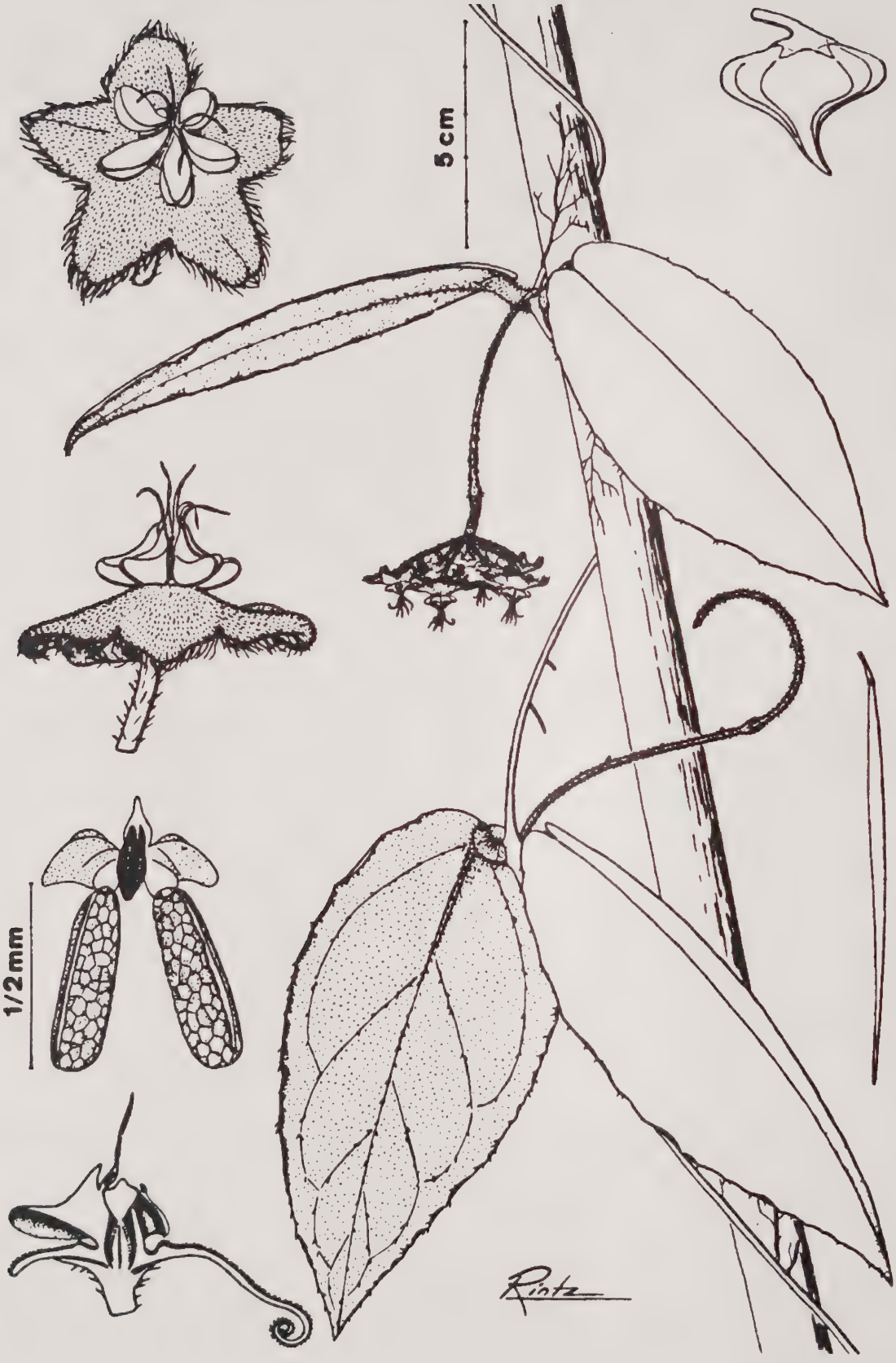
Bottom Left

H. revolubilis *Tsang and Li*...When I first wrote about this plant in the 1st quarter of 2006, the only name I had for it was H. kung ming kina. It has since been identified as H. revolubilis from Southern China. This is a beautiful and impressive hoya. The foliage is narrow and very long with a groove down the center. It is a great bloomer and the flowers are long lasting. It normally has 30 to 40 pure white ½ " flowers per umbel with dark yellow coronas... Photo by Ann Wayman

Bottom Right

An Ereostemma...This photo was labeled as H. ariadna but is in the Ereostemma section so I'm not sure what to call it except beautiful. The Ereostemma's are closely related to hoyas and have often been alternatively labeled as hoyas. This particular one has a rather large flower, about 2 ½ inches in diameter and usually 7 to 8 flowers per umbel. They are practically impossible to bring into flower inside homes and need lots of fresh air and space. Photo by... Ubon Paradee

HOYA PHOTO GALLERY



H. flagellata *Kerr* growth habit and flower parts: Drawing by Dr. Richard Rintz

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